

Green Thumb Newsletter



Number 82-1

January 1982

1982 Admission Fee Policy — A Report from the Director

Final Details Worked Out

In a December meeting with the Cultural and Recreation Committee of the Denver City Council, the details were worked out concerning the city ordinance governing the implementation of a gate admissions fee at the Botanic Gardens. Following, in summary form, are the new regulations for persons visiting the gardens in 1982.

MEMBERS FREE

Our *members* will be admitted *free* upon showing a membership card at the gate.

Others will be admitted free under the following circumstances:

- Children under 7 years of age.
- Denver public, private and parochial school children attending on a *prescheduled* tour and accompanied by adult supervisors (one adult supervisor for each ten children will be admitted free; other adults will be charged the \$2 adult admission fee unless they are members of the Botanic Gardens).
- Persons attending scheduled classes and meetings or persons setting up for shows and exhibits. The Director will be provided in advance of the event a list of names of persons qualifying for free admission under these circumstances.
- Special groups at the discretion of the Manager of Parks and Recreation and cleared through his office at least one week prior to the visit.

REDUCED ADMISSION FEES

Reduced admissions fees will be charged under the following circumstances:

- Non-Denver school groups* through grade 12 will be given a reduced admission rate of 25¢/child and \$1/adult accompanying (one adult per 10 children is required).
- College and university students and their instructors on tours or at on-site study assignments scheduled with the Gardens *in advance* will be charged an admission fee of \$1/person.
- Senior Citizens will be charged \$1 upon showing verification of senior status.

NOTE: *Student* and *Senior Citizen Memberships* are available for \$10/year and make great gifts any time!

The special admissions fee for *groups* will apply *only* if the group has made arrangements with the Education Director *in advance* of its visit. Failure to do so will result in the group being charged the full, regular admission fee at the gate.

REGULAR ADMISSION FEE

Nonmembers and those persons or groups not covered in the categories described above will pay \$2/adult and 50¢/junior (ages 7-16) admission to the Botanic Gardens in 1982.

FREE DAYS

Seven days each year will be designated as "free days" during which *no admission will be charged to residents of the city and county of Denver*. All *non-Denver residents* will pay the regular admission fee on those days. The free days will be coordinated with the other major cultural agencies to avoid conflicts and will be distributed throughout the four seasons of the year.

A gate admissions fee is a new administrative procedure for us. I ask your assistance and patience as we implement the new admissions policy and our gatekeepers learn both a new routine and the mastering of cash registers and disbursing of receipts to each visitor. *You can help us* most by always presenting your *Membership Card* when you come to the Gardens. This will avoid embarrassment to us and to you and will make your entry into the Gardens a very simple procedure each time you visit.

I hope each time the need arises for you to purchase a gift for a family member, friend or neighbor, you will think of the pleasure *you* derive from your own membership in the Denver Botanic Gardens and consider *a gift of membership* for that special person or persons. You will open up to them a wonderful new world of beauty and educational opportunity and, in the process, will help the Gardens grow!

I wish it was possible for me to thank each one of you individually for your encouragement and support of the Botanic Gardens through your membership. With *over 4300* of you contributing through membership to the growth and development of our Botanic Garden that would be quite a feat to accomplish. That you and we can take great pride in our Botanic Garden and the numerous opportunities it provides for relaxation, inspiration and education is evidenced by the fact that in the period January through November last year, *1556 new members* discovered the value of growing with the Gardens! Thank you — each and every one for introducing your friends and neighbors to the Gardens, giving gift memberships and doing everything you can to protect our valuable investment in one of the most dynamic, people-oriented, and successful botanic gardens in the country. We have a fantastic year planned for you in 1982! I hope you visit and enjoy the Gardens often and participate in the exciting programs that are planned throughout the year.

Merle M. Moore

Special — Trip to Britain!

A tour of the great gardens and houses of England and Scotland is planned for members of DBG June 4th through 21st. This trip, scheduled to coincide with a high point of spring bloom, will begin and end in London with stops at Bodnant, Culzean Castle, The Royal Botanical Gardens of Edinburgh and Luton Hoo to name just some.

Read your brochure and don't delay in signing up for this marvelous opportunity.

(Continued next page)

Trip (continued)

And as a Very Special Preview

All are cordially invited to attend a slide show on Britain, January 31st at 2 p.m. in John C. Mitchell Hall. This will feature Dr. William Gambill, Director Emeritus, showing pictures of some beautiful gardens and Mr. James Holme, Travel Consultant, speaking on the world-famous spring flowers and lovely scenery of the island.

After the presentation, all will have an opportunity to discuss the June trip with Mr. Merle Moore and Mr. Holme, your tour directors.

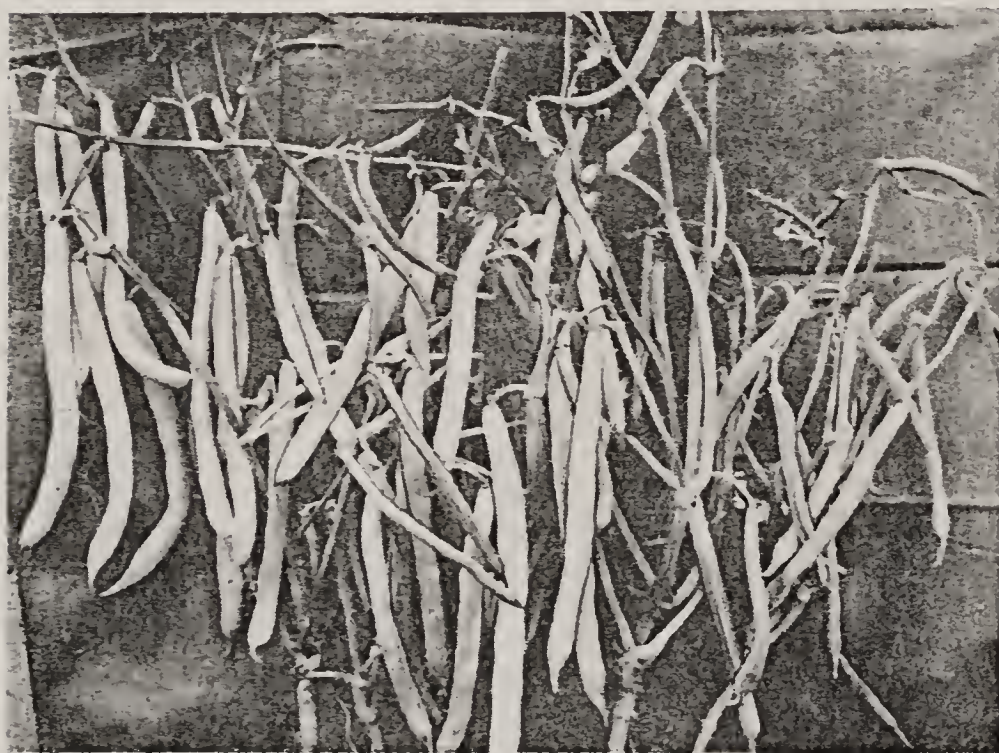
Come and bring your friends and share a lovely afternoon together.

Classes

Many opportunities to work with house plants will be offered in the new year but if January itself is convenient, consider the *Indoor Light Gardening* class. It will begin on January 6 and continue the next three Wednesday evenings from 7:30 to 9:30 p.m. in Classroom B. (Please note room change.) The cost is \$18 for members and \$33 for non-members.

The *Tour of the Rocky Mountain Seed Company* is full. If you are signed up, meet on January 19 at 9 a.m. at the parking lot of 909 York or, if you prefer, at 1325 15th Street at 9:30 a.m. In either case, you will park in the public lots around Larimer Square.

"What should I learn of beans or beans of me? I cherish them, I hoe them, early and late I have an eye to them; and this is my day's work." On Mondays, January 25 to February 22,



from 7 to 9 p.m., Classroom A. *Vegetable Gardening* may help you agree with Thoreau that the "true husbandman will cease from anxiety . . ."

Designing Your Own Landscape from January 25 to February 15, 7:15 to 9 p.m., Classroom B, with Gayle Weinstein is full.

Grapevine Wreaths is full. If you are registered please come at 9 a.m. (note time) on January 27, Classroom B. Please bring material as listed in the Winter Schedule of Educational Courses and plan to stay until noon.

Gardening Tips for January

Gardening tips for January are hard to come by when so many of the indoor activities have been covered in this column before. However, this January, as in years past, there are outdoor activities that will need your attention.

As you are all well aware, we have had an extremely dry fall and subsoil moistures were depleted during the past two growing seasons. We have had little snowfall this winter and during periods of open, snowless months, your trees and shrubs will suffer great injury unless they are deep-root watered. Particular attention should be shown to shallow-rooted plants such as birch, maple and all the evergreens. A Ross Root Feeder or similar hose-attached device is preferred.

If you have young trees with thin bark, particularly those that were newly-planted, it would be a good idea to wrap them now with commercial tree wraps. Start at the base of the tree and move up to a point above the first or second limbs. The wrap should be overlapping slightly so that it will give good protection against water and ice from forming underneath. Tree wrapping is important in Colorado for thin-barked trees because of the potential for sunscald. Actually, sunscald is a poor term because it results from a combination of sun and cold. It normally will not occur on a tree until after mid-January and is most prevalent during the period from late January through March. Prior to that time the tree is in full dormancy and is not effected by sudden temperature changes. About mid-January many trees and shrubs have had their cold period satisfied and are capable of coming out of dormancy on days that are clear and warm, but then are prone to sudden freezing as temperatures drop in the evening.

Sunscald normally occurs on the southwest side of thin-barked trees because the sun at that time of year is at a low angle, warms up the side of the tree, and cells beneath the bark become active. Commercial tree wraps are designed to protect against this warm-up by insulating against sudden changes of temperature.

You can recognize sunscald on the trees by a discoloration of the bark and a shrinking or cracking in long streaks appearing on the southwest side. The cracking is due to the fact that desiccation has occurred. When a cell freezes, water is drawn out of the cell into the spaces between the cells. The cells thus dehydrated are killed. The process cannot reverse because the cells are dead and any water moving back into the cell only promotes the development of organisms which later on usually result in a discoloration of the bark.

If you have not disposed of your cut Christmas tree, you might consider removing all the branches and scattering them around the bases of your garden perennials such as chrysanthemums and the shallow-rooted plants used in rock gardens. The boughs will shade the soil and reduce water loss and this in turn, will reduce the amount of water that might be needed as a supplement during the winter. If you have a fireplace, boughs can be disposed of in the spring in this manner. This is the best way I know to recycle a Christmas tree.

HAPPY NEW YEAR!

Dr. J. R. Feucht

Endangered Plants

The Botany Club invites all interested to attend its next meeting, January 15, 7:30 p.m. Classroom C. Jim Ratzloff will speak on "Vegetation of the Western Slope." Some of his slides will be of endangered species. Members may wish to visit the balcony of the Herbarium where pictures of some of these plants are now on display.

Welcome New Members

Margaret M. Ahrens
Mr. & Mrs. B. L. Aldrich
Peggy Alspaugh & Family
Margaritos Amigos
Mr. & Mrs. Saul N. Axelrad
Mary F. Baker
Peggy Beales
Terry & Kathy Beales-Travis
Mr. & Mrs. Guy Beals
Miss Helen Beatty
Dr. James P. Bennett
Jerry J. Blackard
Mrs. Matthew P. Blue III
James H. Booth
Mrs. Virginia Borchers
Mr. & Mrs. James N. Borland
Linda M. Boster
Mr. & Mrs. Delbert D. Bowen
Ms. Constance M. Brace
Maj. Gen. & Mrs. Richard A. Bresnahan
Mr. & Mrs. A. B. Bristow, Jr.
Stanley Burch
James & Susan Burks
Mary Lee Carl
Mr. & Mrs. William C. Clark
Mr. & Mrs. Michael P. Colligan
Joyce E. Condon
Sister Elizabeth Conroy
Lois Cox
Ms. Ann Cunningham
Mr. & Mrs. Kenneth H. Cupit
Cynthia G. Daniels
Laura Danielson
Art Davidson
Mrs. Thomas A. Davies
Carolyn W. Day
Mr. & Mrs. Donn W. Dean
Mrs. Jorita A. Denning
James Dillard
June A. Duggan
Katharine K. DuVivier
Leone Edstrom
Mrs. Miriam Epstein
Mr. & Mrs. Roger L. Erickson
Mr. & Mrs. Roy E. Fagan
Andy Ferguson
Sally Rae Fox

Mr. & Mrs. Paul F. Goldsmith
Robert Gratiot
Mr. & Mrs. Eugene C. Grauberger
Mrs. John R. Greenly
Mr. & Mrs. Timothy A. Gregory
Karen Grote
Mr. & Mrs. Gary L. Gump
Judi Haley
Sharill Hamilton
Mrs. Martha Hampton
Jack & Felicity Hansen
Mr. & Mrs. Douglas W. Hanson
Mr. & Mrs. Shelby F. Harper
Mary Colleen Harrington
Jana K. Harris
Mr. & Mrs. C. R. Hatfield
Mr. & Mrs. James M. Haywood
Carol Hearn
Mrs. Hazel E. Hedges
Nancie Hill
John V. N. Hitch
Jan Hoagland & Family
Mr. & Mrs. Kenneth L. Hoagland
Ken & Suzanne Hornback
Margaret R. Houston
Mrs. Mary Jelliffe & Family
Barbara J. Johnson
Mr. & Mrs. R. Guy Johnson
Clark Johnston
Mrs. Angelo G. Karagas
Jeffrey D. Karron
Mr. & Mrs. Sidney T. Katzson
Debbie Leonard
Mrs. Mary S. Levenson
Carol A. Levine
Mrs. Elaine W. Lewandowski
Randy Lucas
Anne D. Lyman & Family
Harry R. & Evelyn McDonald
Mary E. Madsen
Walter Maguire
William J. Mapel & Family
Janice Marie
Ruth L. Marquardt
Susan A. Marsden
Barbara Martin & Family
Mary E. Martinez

Ms. Jean Morley
Nancy K. Murray
Ray & Anne Mutz
Mrs. Joseph A. Novak
Dorothy Oh & Family
Mr. & Mrs. J. Thomas Okin
Mr. & Mrs. Edward F. Ostertag
Mr. & Mrs. James B. Parden
Thomas Perumean
Robert Powers & Family
Dr. John P. Rahart & Family
Martha Rambaud
Mr. & Mrs. Lee H. Robinson
Roger R. Rockenbach
Mr. & Mrs. Steven J. Rohrbach
Lisa Rozinski
Mrs. Anne M. Salyards
Mr. & Mrs. Donald M. Sampson
Sue Sanford
Steven Savageau
Jeff Scott
Mrs. A. R. Shanahan
Marian D. Sheppard
Linda Shilvock
David H. Silverman
Keith Stieduhar
Carolyn Stone
Mr. & Mrs. Ray W. Sylvester
Marjorie Isabel Taylor
Anne N. M. Teague
Mr. & Mrs. J. E. Tomlin
Phyllis Tull
Mr. & Mrs. J. H. Van de Venter
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Mr. & Mrs. H. Fred Watts
Ms. Nanon A. Weidmann
Judy Weingarten
Gary Wermerskirchen
Mr. & Mrs. Joseph P. Wharry
Mrs. J. E. White
Ita Willen
James R. Willey
Mr. & Mrs. Edward L. Winter
Gail Wurdeman
Mrs. W. J. Wyatt
Bernita A. Youngs

Insect Illustrations

Fifty-six scientific illustrations showing the beauty and variety of insect life will be displayed during the month of January from 10 a.m. to 2 p.m. each day on the balcony of the Herbarium. The shining carapace of a beetle, the hairy legs of a wasp, the furry softness of a moth's wing, all are rendered with amazing skill and accuracy and drawn with delicate exactitude.

Insects Upstairs — Birds Downstairs

The Lobby Court will feature a tropical display of both plants and animals this month. Our *Calathea* and *Maranta* collections will complement Bali Mynahs, on loan from the zoo. These birds, also called "Rothschild's grackle", are white with a blue mask which surrounds the eyes and tapers to a point on both sides of the neck. This display will be an added reason for a visit to the Gardens in the dark winter days.



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January 1982

Address correction requested

Tributes

- memory of Mrs. Donald F. Brown
Mrs. Mason K. Knuckles
- In memory of Mrs. Myra Brown
Morning Belles Garden Club
- In memory of Michael Crilly
Dr. and Mrs. Orville Johnston
Dr. and Mrs. Steve Holt
Miss Erika Holt and Miss Rachel Holt
- In memory of Margaret Janosky
Former Roseball Garden Club Friends
- In memory of Mrs. Charles J. Kelly
Mr. and Mrs. John C. Mitchell
- In memory of Norman F. Patrick
Mrs. Thomas E. Taplin
- In memory of Pauline M. Smith
Mr. and Mrs. Gary C. Canady
- In memory of Jay Steiner
Mr. and Mrs. Robert Appel
- In memory of Mrs. F. H. Sterne
Mr. and Mrs. Jacob Boyer
Mrs. Ruby M. Carley
Members of the First Baptist Church of Endicott,
New York
- In memory of Matilda Zesch
Karl A. Anuta
Hugh and Urling Kingery
Jeanne D. Nielsen
Henry E. Reich
- Contributions of cash, goods, or services have been
received from the following friends:
Colorado Woman's Conservation Club
Evergreen Half Acre
G. G. Gauger
JBK Landscaping, Inc. and Shady Tree Nursery
Park Hill Garden Club
Swingle Tree Company
Valley Block

Thoughts for 1982 and the Years to Follow!

Paul Cowan Garver 1/7/64 - 9/10/81

If a man does not keep pace with his companions perhaps it is
because he hears a different drummer. Let him step to the music he
hears, however measured or far away.

Thoreau

Yea!!! 1/7/81

Well, here I am! Seventeen years old today,
boy the years are going by too quick!
Birthdays are very special to me,
a day to celebrate your existence,
and a day to look back.

Well, here I am! Seventeen years old today,
boy the clock's ticking fast.
Birthdays are a special time,
a day to celebrate your existence
and cherish the ones around you.

Life is so full,
abounding with wonders to be seen
and emotions to be experienced.
If we all just open our eyes and gaze
upon the subtleties and finer shadings of life
greater worlds unfold.
Worlds we rarely find time to look at.
But they're here and always will be
when we choose to find them.

I'm grateful to be a leaf
in the ever growing tree of life
and this leaf's not falling off
for nothing.

Paul Garver

(One of our members whose son was particularly fond of the
Garden wished to share this poem with our readers.)

Green Thumb Newsletter



Number 82-2

February 1982

Annual Membership Dinner

Did you ever wonder what it would have been like to have one of the first to venture into an unknown frontier? Our speaker for the Annual Membership Dinner to be held on Tuesday evening, February 23, will fill us in on what it was like for the first botanists who came to the West to gather plant materials before it was disturbed or destroyed by explorers and settlers. Dr. Richard Beidleman, presently Professor of Biology at Colorado College, has followed the trails documented by the first comers to Colorado and the West and he has photographed what they would have seen along the way. Dr. Beidleman, an entertaining and sought after speaker, will share his slides and his own special perspective in "Plant Collectors on the American Frontier" after dinner in John C. Mitchell Hall on February 23. Social hour is at 6:00 and dinner at 7:00. The cost this year is \$12.00 and reservations must be in the office by February 17, but don't wait 'till then! Reservations are limited by the capacity of the Hall so get yours in as soon as possible. See you there.

Tributes

In memory of Lura Atanasoff

Mrs. F. V. Altvater
Jane H. Anderson
Betty Dunklee
E G & G Sealol, Inc.
R.C. and Edith D. Gathers
Mrs. Mimi Horsley and Family
Celeste and Jack Grynberg
Mrs. Marie Hyland
Mrs. Jessie W. Law

Robert and Pat Law
Mr. and Mrs. S. William Lasley
Frank Mansfield
Mr. and Mrs. John G. Napier
Ruth and Eldon O'Neal
Edwin and Sharon Rounds Jr.
Frank and Doris Southworth
John E. Wolfe

In memory of Jose Camacho

Mary Camacho

In memory of Mrs. Gladys G. Eames

Mrs. John Clark Coe

In memory of Winifred Egan

Susan Garver for Lester A. Cowen

In memory of Frank B. Freyer, II

Perennial Garden Club

In memory of Harry Greathouse

Dr. Judith M. Hilton

In memory of Agnes Hofbauer

Laboratory Department of Beth Israel Hospital

In memory of the Rev. Leon King

Margaret Wallace

In memory of Maude R. Lesley

Herbert and Beatrice Jones

In memory of F. M. "Cappy" Ricks

Mr. and Mrs. William B. Collister

In memory of Mrs. F. H. Sterne

Rev. Philip French
Rev. Harold Stoddard

Classes

Beginning Greenhouse Management each Wednesday evening from February 3 to March 31, 7 to 9 p.m., will provide a sound foundation on this topic. Lectures will range from construction of greenhouses to insect and disease control for the plants. The cost is \$36 for members and \$51 for nonmembers.

Many members enrolled in Botanical Drawing last year. Now sign up for *Art in Nature—Sketching*, from February 9 to March 30, 10 a.m. to 12 noon, Classroom B, and learn to see plants in a new manner. Please bring a large sketch pad, charcoals, soft pencils and pastels. The fee is \$32 for members and \$47 for nonmembers and as of this writing 8 spaces remain.

New members who do not know the joy of growing plants in their homes may wish to sign up for a *Beginning Class in House Plant Multiplication*. Your instructor will show step by step methods with easy plants so success is practically guaranteed. The three week class on February 11, 18, and 25 is scheduled from 1 to 3 p.m., Classroom B. The cost of \$15 for members and \$30 for nonmembers will cover materials and also provide several genera to take home.

One of the most important insects of all will be discussed on February 16 from 7 to 10 p.m., Classroom C, in *Backyard Beekeeping for Beginners*. The fee is \$6 for members and \$21 for nonmembers.

A particularly appropriate construction method for rock gardens will be demonstrated on February 17 at 3 p.m. Please meet in the propagation room of the greenhouses, wear old clothes and bring rubber gloves. Stan Metsker, President of the Horticultural Arts Society of Colorado Springs, will help you make one *Trough* to take home. The fee of \$7 for members and \$22 for nonmembers will cover the cost of materials.



Do you wish to know more about the Japanese Garden and its tea house, the outdoor test gardens, the new home demonstration garden? All these topics and more will be covered in *The Outdoor Gardens at 1005 York St.*, an eight week class to prepare volunteers to become outdoor guides. This is from February 24 to April 14, 10-11:30 a.m., Classroom A and outdoor gardens. The charge for the class is \$10. Please bring a 3-ring notebook.

The *Winter Nature Walk* is full. If you have signed up, please bundle up and meet at the parking lot of 909 York at 10 a.m. on February 25 or at the southwest corner of the Cherry Creek Denver store at 10:15 a.m. If inclement weather, the walk will be cancelled.

Contributions of cash, goods, or services have been received from the following friends:

Executive Women International
Steven Stelk

GARDENING TIPS FOR FEBRUARY

Selecting Plant Materials for the Landscape

Now is a good time to design or redesign your yard and thumb through garden books to select the plants you dream about growing.

Selection of plants should be the last part of your design concept. The design, put on paper and drawn to scale, should indicate the location, spacing and total number of species used.

When selecting plants, consideration must be given to the ultimate size of the plants both in height and spread, particularly in relation to structures, access walks and other plants. It is easy to overcrowd a landscape.

Water requirements and shade or sun tolerance must also be considered. It is a poor design to mix drought-enduring plants with those of higher water needs. For instance, it would not be appropriate to plant spruce with pine in the same planting unless some form of transitional planting is designed into the scheme.

Exposure is one factor that is often overlooked when plants are selected. It is among the leading causes of failure of plants to survive. For the most part, exposure, soil and water requirements go 'hand-in-glove.' Plants that tolerate hot sun, relatively dry soil and severe wind exposure are more likely to perform best on a south or west exposure. In the High Plains, the most severe exposure is the southwest and becomes more severe if the terrain slopes in that direction. Plants that have a moderate water requirement are best on an east or north exposure.

Once plants are grouped into exposure and soil mixture needs, the next step is to select from these, the ones that will fit the plan from the standpoint of size, form, color, texture, and utilitarian needs such as for screening, windbreak or shade.

Turf is an important part of the landscape. It provides the open, green areas, the 'meadows' so-to-speak. From the standpoint of both maintenance and good design, turf is best confined to open areas, separate from trees and shrubs and in oval or circular shapes.

Where turf is undesirable because of steep slopes, too much shade or difficult access, consider using other ground covers. They can provide a refreshing change in over-all appearance and at the same time, provide a transition to taller plantings.

When selecting trees and shrubs, foliage color, texture, shape and mature size should be considered. Many plants are selected only from the standpoint of flower or fruit effect. This is a mistake. Keep in mind that flowers and fruit are of short duration compared with the longer time that the foliage as well as winter branching effect will be displayed. To avoid a monotonous landscape, an attempt should be made to provide a variety of foliage textures and color contrasts. On the other hand, care must be taken to avoid too much variation resulting in a hodgepodge landscape. Avoid, for instance, the exclusive use of junipers across the front of the house. Rather, break it with some other types of shrubs. Plants should be repeated in a landscape but in masses or groups rather than one here and one there. The same is true for plants of the same or similar texture or foliage color.

Following are lists of some plants as examples, that can be used for various effects. It is not intended to be a complete list but rather some of the more outstanding examples:

TREE FORM

(Relative Texture Follows Plant Name)

Columnar to Oval

Catalpa, Northern, Coarse	Maple, Columnar, Medium coarse
Elm, English, Medium	Oak, Scarlet, Medium
Linden, American, Medium coarse	Poplar, Lombardy, Medium
Linden, Greenspire, Medium	Poplar, Bolleana, Medium

Vase-Shaped (Upright, Spreading)

Elm, American, Medium	Honeylocust, Fine
Hackberry, Common, Medium	

Conical

Fir, Concolor, Fine	Spruce (All Types), Fine
Linden, Littleleaf, Medium	

Weeping

European Weeping Birch, Medium fine	Wisconsin Weeping Willow, Medium fine
Niobe Weeping Willow, Fine	

TREES FOR FOLIAGE COLOR CONTRAST

Honeylocust, Sunburst, Yellowish (at tips)	Chokecherry, Shubert, Purple
Russian-olive, Silvery, Gray	Plum, Newport, Purple
Maple, Schwedler, Purple	

TREES FOR DISTINCTIVE BARK

European Birch, Smooth, White	River Birch, Chestnut brown
European Bird Cherry, Smooth, Gray	Aspen, Greenish to white
Silver Maple, Rough, Silvery-gray	

TREES FOR INTERESTING BRANCH PATTERN

Honeylocust, Delicate, Zig-zag	Kentucky Coffeetree, Coarse, stubby
Catalpa, Coarse, stubby	Elm (Any), Fine, intricate

SOME SHRUBS FOR VARIOUS EFFECTS

Foliage Color

Pfitzer Juniper, Blue, blue-green	Variegated Dogwood, Green & White
Buffaloberry, Silvery	Cistena Cherry, Burgandy-red

Winter Stem Color

Redstem Dogwood, Blood red	Graystem Willow, Whitish-gray
Yellowtwig Dogwood, Bright yellow	River Birch, Chestnut brown

Glossy Foliage

Euonymus, Wintercreeper (and others)	Firethorn
Oregon Grape-holly	English Ivy (a vine)

Fall Color

Euonymus, Winged, Crimson	Dogwood, Yellowtwig, Purplish
Viburnum, Wayfaring, Bronze	Maple, Amur, Crimson
Viburnum, European Cranberry, Yellow	

Dr. J. R. Feucht

GREAT SUCCESS!

A note of thanks to many who helped make our first outdoor KCFR-DBG Caroling Party a success. Jim Sprinkle of KCFR coordinated the event and much time and effort was given by Andrew Pierce, Larry Latta, and Dean Hall for the Gardens. The paths were lined with gently glowing luminarias. Music coming from Anna's Overview was played by T.U.B.A. through the guidance of Bill Clark and Jeannie Sonnleitner. A choir coordinated by David Skolnick sang by the Home Gardeners Outdoor Workshop. Afterwards, hot chocolate and cookies were served in the Lobby Court. A special thanks to Joseph of Vollmers on East Colfax for a donation of cookies, and also to Chef Leo's who lent us the large urns from which to serve good, hot cocoa to the 1200 carolers. It was fun!

Botany Club, February 19, 7:30, Classroom C.

J. Scott Peterson will speak on "Flowers of the Uintah Basin." Free and all welcome.

Welcome New Members

Miss Clara C. Alvey
Mr. & Mrs. Harold W. Amoss
Mrs. Janet M. Bailey
Zonella E. Bailey
Mr. & Mrs. John B. Baird, Jr.
Geoffrey Baum
Donna M. Beauchemin
Mrs. Sally Beeson
Mrs. Madelyn M. Bell
Marilyn A. Blake
Mary E. Blake
E. Scott Boggess
Catherine Boucher
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Nancy F. Collins
James Cosby
Mrs. Josephine Cosner
Helen R. Cranor
Gloria A. Cunningham
Charles D. Dana
Mrs. Cris Dobbins
Ken & Karen Downey
Ms. Shannon Downing-Baum
Thomas M. Doyle
Mr. & Mrs. Stephen N. Drake
Karen S. Durr
Stephen K. Duvall
Mr. & Mrs. Vern Eliason
Neil Emmerman
Mr. & Mrs. Sadek Farag
Rev. & Mrs. Charles E. Farr
JoAnn Faulstich
Alan & Heidi Fine
Ann Fothergill
Tom Frederiksen-Cherry Family
Mary M. Frohlick
Diane Fullerton
Dr. Eugene Gardner

William Gates
Martin Globucnik
Nelson Goforth
Mrs. Grace Goodding
Peter W. Gray
Wally & Kathy Greb
Mr. & Mrs. Wallace R. Griffiths
Ronald K. Hansen
Mrs. Julie Harper
Douglas S. Harrington
Ms. B. K. Harris
Anna M. Hatfield
Karen Hatfield
Phil Hayward
Jane Anne Heinz
David T. & Kimberly T. Henry
Carolyn Herklotz
John H. Hezlep
Mr. & Mrs. Bob Hille
Julius Hollander
Ronald & Margaret Hurst
Gail E. Jerard
Mrs. Patricia Johansen
Mary Ellen Kemp
Mrs. Fumi F. Koshi
Mr. & Mrs. George E. Lamb
Mr. & Mrs. Harry O. Lawson
Allan L. Lazrus
Dorothy M. Lechnir
Mr. & Mrs. Woodrow W. Livingston
Diane LosLeben
Mary Lutz
Mr. & Mrs. J. E. McElroy
Mrs. Mary H. McGill
Mr. & Mrs. William McKenney
Karl E. Magsamen
Suzanne M. P. Martin
Mrs. C. P. Mattson
Mrs. Elston Mayhew
Sandra Merritts
Erich Meyer
Evelyn B. Nichols
Mr. & Mrs. E. E. Nielsen
Mrs. Ruth Kern Oen
John O'Keefe
Col. & Mrs. C. B. Overacker
Robert H. Parker

Paul R. Peak, Jr. & Family
Mrs. Virginia Lee Peterson
Jennifer Phelps
James P. Pollock
Mr. & Mrs. C. W. Preston
Mr. & Mrs. Dan J. Ramsey
John Reber
Merrily Reflow
Virginia Reid
Robert R. Retz & Family
John O. Richardson
Sharon Roach
Mr. & Mrs. Richard B. Roberts
Mrs. Henry Robinson
John M. Row
The James L. Rumsey Family
Mrs. Otto Rupp
Christine Russell
Mrs. Della Schmitt
Mr. & Mrs. Rick Shanks
Susan Spragg
The Richard Stanton Family
Mary E. Strauss
Jill E. Steele
Margaret C. Stevens
Michael & Cynthia Stipek
Eric Struhsacker
Mr. & Mrs. Harley D. Swanson
Mr. & Mrs. D. B. Tait
Mr. & Mrs. Charles A. Tallard
Raymond J. Tetreault
Betsy Thornhill
J. M. Tucker & Family
Kent & Nancy P. Van Zant
Linda K. Wackwitz
Mr. & Mrs. Carl D. Walker
Herbert Wallower III
Helen M. Weagraff
Arthur Keith Whitelaw III
Mr. & Mrs. Joseph L. Wilcox
Miss Willie Williams
Clifford R. W. Winslow
Kathleen M. Wood
Sarah Wynn
Mr. & Mrs. J. L. York

Popular Book Now Available

Grow Native: Landscaping with Nature and Apt Plants of the Rocky Mountains by Sam Huddleston and Michael Hussey is again available in the Denver Botanic Gardens Gift Shop. Originally published in 1975, this popular book has been out of print. Plants described relate "to the very different environment of the foothills region, the east face of the Rockies in Colorado, northern New Mexico and southern Wyoming in the elevation range from 4,500 to 7,000 feet." Both authors are members of the American Society of Landscape Architects and currently Mr. Huddleston is developing the master plan for DBG at Chatfield Arboretum.

1982 Garden and Home Show

This spectacular annual event that brightens up the winter season to some 100,000 visitors is scheduled for February 5-14, 1982. Visiting hours are from Noon on Sats./Sun./Wed./Fri. (except opening night, then 6 p.m.) and from 6 p.m. on Mon./Tues./Thurs.

The theme of this year's show is "Colorado: Gateway To The World" and the show takes place in the Currigan Exhibition Hall in downtown Denver. Come and see beautiful gardens and items for every home.

Which Do You Prefer?

As many of you know, each May the Botanic Gardens offers its membership a free plant from a selection made by the staff. These consist of both plants for cultivation outdoors as well as tropical “house” plants. In order to provide the kind of plants our membership is interested in cultivating we would appreciate your response to the following questionnaire. Please return it as soon as possible to the Information Desk in the lobby or mail it to 909 York, Denver 80206, attn: Greenhouse, so we may have your guidance.

Plants for Membership Distribution in Future Years

1. I prefer

perennials.

trees or shrubs.

tropicals.

other (annual? vegetable? please list) _____
2. Landscape plants I prefer are:

a. reliable old stand-bys.

b. “different” even if difficult.

c. experimental or for testing.

d. _____
3. Tropicals I prefer are

a. reliable old stand-bys.

b. “different” even if difficult.

c. most unusual.

d. _____
4. Specific suggestions:

Focus On The Travel Committee

During the past decade members of the Gardens have been fortunate enough to visit many varied parts of the world, ranging from Alaska to New Zealand. In no small way this has been due to the Travel Committee which like all others is appointed by the President of the Board of Trustees. In the past several Trustees have served on the Travel Committee and at present it is comprised of Nancy Mitchell (Chairperson), Bill Gambill, Moras Shubert, Merbie Robinson, Betty Nicola, Ed Connors, Anne Freyer, Bea Taplin, Merle Moore and Andrew Pierce.

How you can help!!

As members of the Gardens you are in a position to influence choice and type of trip by letting us know where you would like to visit and for how long, etc. The Travel Committee is very receptive to ideas of the type and styles of trips that you would like to go on and you are encouraged to let Nancy Mitchell know at 985-0437; or if you wish to put your thoughts on paper, kindly send them to the Gardens, Attn: Travel Committee. We endeavor not to repeat locations and with only one or so international trips per year there is plenty of the world left to enjoy.

Our travel groups contain a wide cross-section of members, who inevitably are congenial travel companions, and you are always welcome to join us on one or more of the trips offered.

(Editor’s note: Please remember the trip in June to see the stately homes and great gardens of Britain. Write James Holme at P.O. Box 949, Indian Hills, CO 80454 for further information.)

**AFRICAN VIOLET SALE,
FEBRUARY 13, 9-4:30 P.M.,
THE JOHN C. MITCHELL HALL**

Around and About the Gardens

Gates Memorial Garden— More Than Just Trees

“A tranquil mountain woodland thick with fragrant pines and enhanced by the music of a tumbling alpine-born stream carrying its pristine waters to the fertile valleys below.” Such a setting was envisioned by Mrs. Gates as work began in 1961 on the Gates Memorial Garden, a tribute to Charles Cassius Gates. The garden was in fact planned to recapture the features of the family home, *The Chateau*, in Bear Creek Canyon.

Nestled between the Rock Alpine Garden and the Japanese Garden, the Gates Memorial Garden retain today the serenity and spirit reminiscent of the Rocky Mountain high country. Several appropriately placed benches along a winding trail now provide a place for those wishing to rest or meditate.

Yet there is much more. An interesting collection of native plants along with other features of the garden provide a unique opportunity to observe and understand the many stories nature has to tell.

Mature conifers dominate the garden setting. The Ponderosa Pine (*Pinus ponderosa*) is found at the north entrance to the garden and is characteristic of the “foothill zone,” one of five “life zones” found between the high plains here at the Botanic Gardens, west to the top of Mt. Evans at 14,264 feet.

The enduring and somewhat mystical Bristlecone Pine (*Pinus aristata*) is seen to the east. Sometimes called the fox-tail pine, this tree does surprisingly well in the Denver area as is evidenced by the many fine specimens displayed throughout the community.

The Gates Garden also contains groupings of native groundcover plants such as Oregon-grape (*Mahonia repens*), Boxleaf (*Paxistima myrsinites*), Kinnikinnick (*Arctostaphylos uva-ursi*) and Wild Strawberry (*Fragaria ovalis*).

Survival is not always easy in an ecosystem. Plants have special adaptations helping them to survive in their particular environment. The surface/volume ratio of pine needles is small so as to limit loss of water through transpiration. The screw-like shape of the Mountain Mahogany (*Cerocarpus montanus*) fruit apparently allows for more successful seed germination in the wild.

In some cases Mycorrhiza fungus live in association with pine roots with a resultant benefit to each as observed in an ability to more efficiently take up minerals from the soil.

The most popular tree by far in the Gates Garden is found just past the Bristlecones adjacent to the pathway. I’ve been quizzed many times by visitors who are impressed by the gracefulness of this very special tree, Weeping Rocky Mountain Juniper (*Juniperus scopulorum* ‘Pendula’). It is labeled for your convenience.

I encourage you to take a walk through the Gates Garden. Pause to meditate or experience first-hand the various stimulating aspects of this woodland setting. Catch the sweet fragrance of the Big Sagebrush (*Artemisia tridentata*) and pause to appreciate the lustrous golden cones of the Limber Pine (*Pinus flexilis*) casting a memorable silhouette against a bold Colorado sky.

Joseph V. Tomocik,
Gardener Florist II

Oasis—Art and Horticulture

A film and presentation on “An Approach to Biodynamic French Intensive Horticulture” will be presented by Lawrence Hershman on February 20 at 1:30 p.m. in Classroom C. Mr. Hershman, who studied the subject in California, is establishing an orchard in Erie, Colorado and will report on that as well as other topics. All welcome.



You are cordially invited to attend
The Annual Membership Dinner

Tuesday, February 23, 1982.
John C. Mitchell Hall — Denver Botanic Gardens

*''Plant Collectors
on the
American Frontier''*

by
Dr. Robert Beidleman

*An illustrated talk following the trails of the
first botanists back to the Lewis & Clark Expedition.*

Social Hour 6:00 pm

Dress informal

Dinner 7:00 pm

\$12.00 per person

(Please return this coupon for reservation.)

Kindly reserve _____ places for me at the Annual Dinner.

Name _____

Name of guests: _____

Address _____ Phone _____

Please return this reservation form with your check by February 17 to:

Denver Botanic Gardens (attn: Annual Dinner)
909 York Street
Denver, CO 80206

Reservations are limited.

THE JOLLY GREEN GARDENER



FEBRUARY 1982, Vol. 12, No. 1

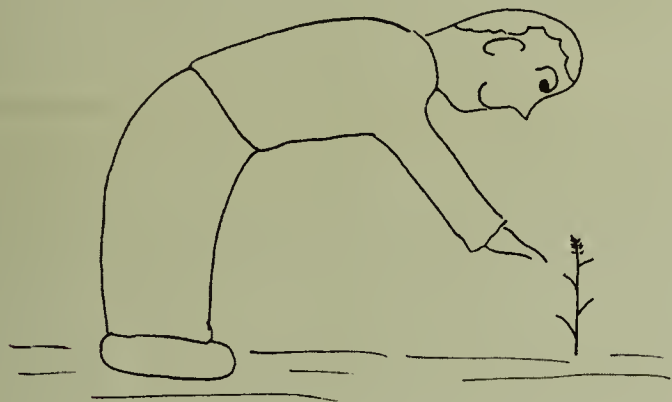
(For Junior Readers)

DENVER BOTANIC GARDENS

Grasses

The grass family is a very large and important group of plants. They furnish man with a principle source of food and a large part of the food for domestic animals. They are also used in industry and for yards and gardens.

The typical grass plant hardly needs a description, for everyone is familiar with the narrow-leaved grasses of lawns and pastures. There are 5,000 different species or kinds of grasses. Three of the most important grasses are rice, wheat, and corn.

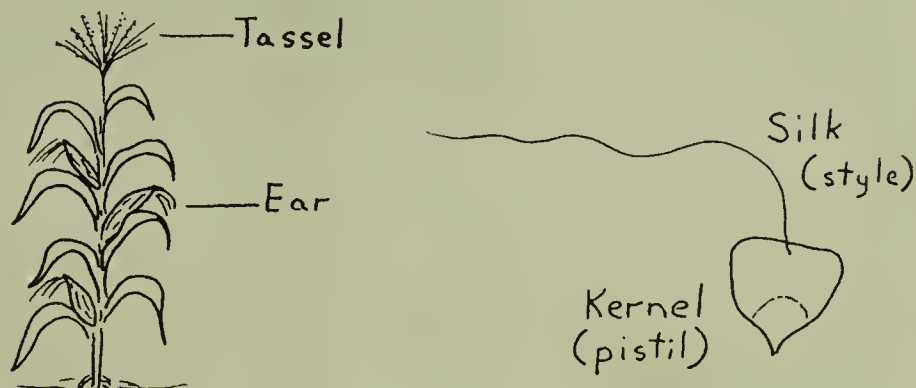


Rice was grown by man at least 5,000 years ago. It is the chief food for millions of people throughout Asia (China, India, etc.). Water speeds up the growth of rice so it is grown in areas that can be flooded with water. Rice grows to a height of five feet. Besides its great use as food, it is used to make paper and hats.



Wheat is one of the oldest of cultivated plants. It was grown in portions of Asia and Africa in 4,000 B.C. Wheat was introduced into Mexico by the Spaniards during the sixteenth century, and brought to Virginia and Massachusetts by the English colonists in the seventeenth century. Modern bread wheat has a large, nutritious grain as the result of thousands of years of selective cultivation.

Corn is not a typical grass for it is a tall plant with large, wide leaves. It cannot be supported by ordinary fibrous roots typical of other grasses so special prop roots develop to help support the plant. The male and female flowers are separate from each other. The male flowers are clustered at the top of the plant and form a plume-like tassel. The female flowers are grouped together on a cob, enclosed in leafy husks, and found lower on the plant. The thread-like projection (silk) protruding from the top of the ears are the styles of the many female flowers inside the ear. Each kernel of corn, with its attached style, is a single female flower. A pollen grain must be caught by each style for the pistil to develop into a kernel of corn.



Corn has been cultivated by man for so long that the wild ancestor of corn is not known. Corn was cultivated in the Western Hemisphere by the Maya people a thousand years ago and by various Indian tribes of Central and South America before that. Today, corn has many uses: canned for food, cornmeal, breakfast foods, food for livestock, corn oils, corn starch, corn syrup, and alcohol.

Bamboo

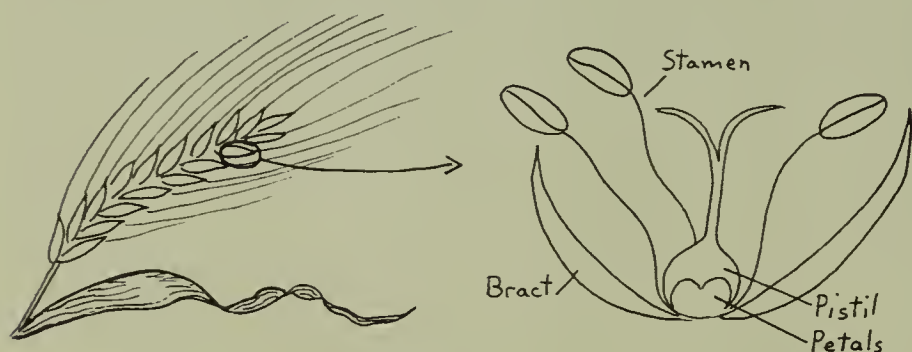
Bamboo plants are the trees of the grass world. They are mainly tropical plants and can grow as tall as a hundred feet. They grow rapidly and there are records of 18 inches of growth in one day. In the orient, bamboos are used for construction of houses, making paper, and textiles. The young shoots are eaten like asparagus.



Grass Flowers

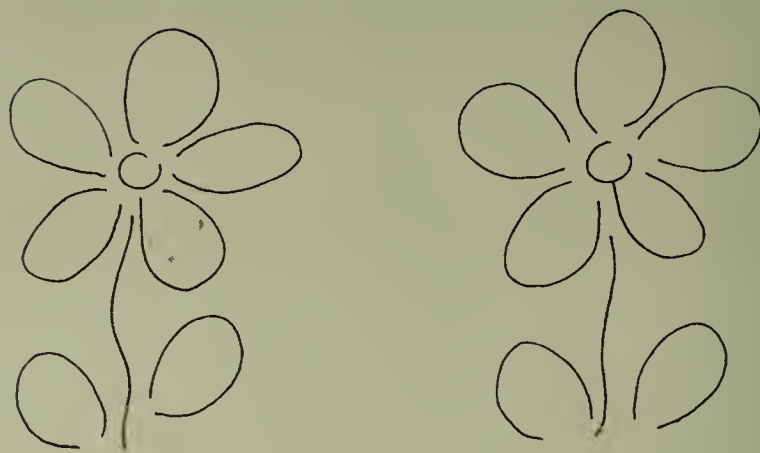
Many people are surprised to discover that grasses have flowers. Since grasses are wind pollinated, they do not have large, brightly colored petals necessary to attract insects for pollination. Grass flowers are usually small and inconspicuous. The flower or flowers form spikelets. The spikelets are grouped into a head as in wheat or ears of corn, or open branching clusters as in rice.

A grass flower consists of one pistil (the female organ) and 3 stamens (the male organs). The petals have been reduced to 2 very small colorless scales. The pistil and stamens are surrounded by bracts which often have long, hair-like appendages called awns.



The fruit produced is a one seeded grain. The fruits have been prized by man for thousands of years as food. Selective plant breeding has produced grasses with greater fruit production as can be seen in modern wheat, corn, and rice.

Spaghetti Pictures



Cook some spaghetti noodles as directed on the package. Drain off the water and rinse the spaghetti. Add a little water to the spaghetti and a few drops of food coloring. This will color the spaghetti. Drain and rinse. Arrange the spaghetti on a piece of paper to make a picture. Let it dry. It will stick to the paper. Spaghetti noodles are one of the many foods made from wheat.

Jolly Jokes

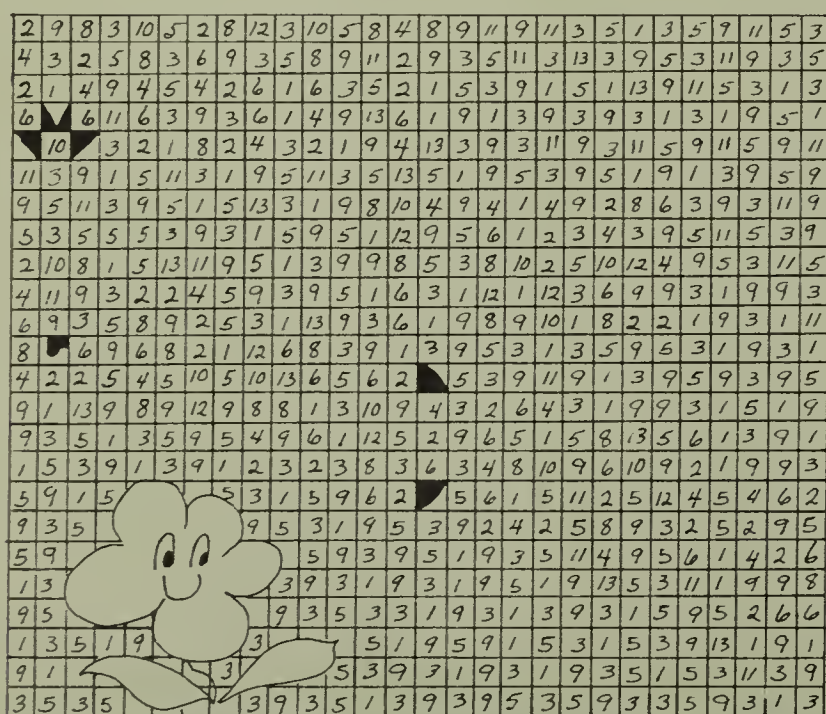
What kind of song do
you sing in a car?



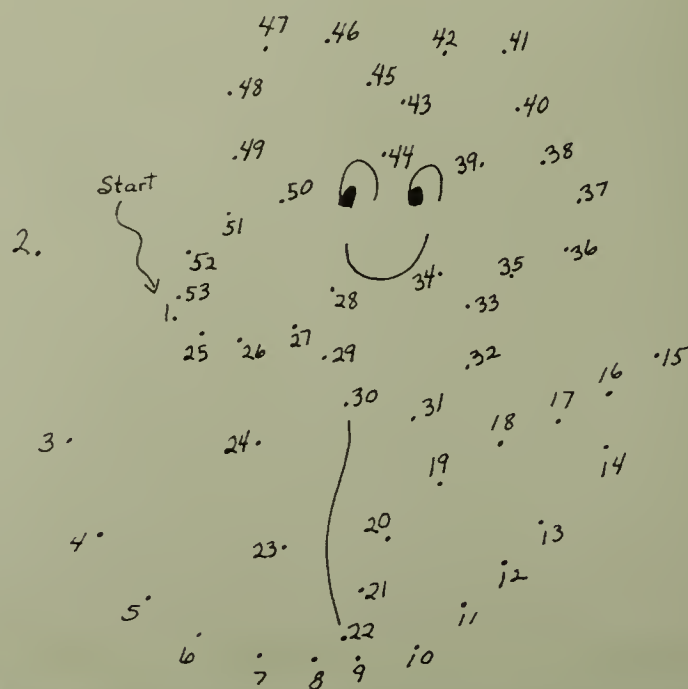
a
cartoon!

Puzzles

Color all the squares with even numbers (2,4,6, etc.) and discover the secret message.



Connect the dots in numerical order (1-2-3-4-5 etc.) and reveal the secret picture.



Calendar of Events



February 1982

1)*	7:00 p.m.	Education Building—Classroom A (This class continues on Mondays at 7:00 p.m. through February 22)	"Vegetable Gardening"—John Brett
1)*	7:15 p.m.	Education Building—Classroom B (This class continues on Mondays at 7:15 p.m. through February 15)	"Designing Your Own Landscape"—Gayle Weinstein
2)*	9:30 a.m.	Education Building—Classroom B	Parks & Rec. Dept.
2)*	1:00 p.m.	D.B.G. House—Dining Room	Editorial Committee Meeting
2)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
3)*	1:00 p.m.	Education Building—Classroom C	Guides Class
3)*	4:00 p.m.	D.B.G. House—Dining Room	Planning Committee Meeting
3)*	7:00 p.m.	Education Building—Classroom B (This class continues on Wednesdays at 7:00 p.m. through March 31)	"Beginning Greenhouse Management"—Marsha Celesta
4)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
5)*	11:00 a.m.	D.B.G. House—Main, Dining Rooms	Civic Garden Club
5)	1:00 p.m.	Education Building—Mitchell Hall	ROMCOE—Metro Water
6)*	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
7)*	5:30 p.m.	Education Building—Mitchell Hall	Denver Alumni of Colorado College
8)*	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
9)*	10:00 a.m.	Education Building—Classroom B (This class continues every Tuesday at 10:00 a.m. through March 30)	"Art in Nature" Dr. Oksana Ross
9)*	12:00 m.	Education Building—Herbarium	Herbarium Committee Meeting
9)*	1:00 p.m.	Education Building—Classroom C (These training classes continue on Tuesdays through March 16)	Guides Training Class
9)*	4:00 p.m.	D.B.G. House—Dining Room	Executive Committee Meeting
9)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
10)*	9:00 a.m.	Education Building—Classroom C (This class continues each Wednesday at 9:00 a.m. through March 17)	Master Gardeners Training
10)*	9:30 a.m.	D.B.G. House—Main Room	D.B.G. Guild
10)*	11:00 a.m.	Education Building—Mitchell Hall	University Health Sciences Center Volunteer Recognition Luncheon
10)*	3:30 p.m.	D.B.G. House—Dining Room	Chatfield Hort. Advisory Sub-Committee
10)	7:00 p.m.	Education Building—Mitchell Hall	ROMCOE—Metro Water
11)*	9:30 a.m.	Education Building—Classroom A	Cherry Knolls Garden Club
11)*	1:00 p.m.	Education Building—Classroom B (This class continues at 1:00 p.m. on February 18 and 25)	"Houseplant Multiplication for Beginners"— Mr. Dennis Haldorson
11)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
13)	9:00-4:00	Education Building—Mitchell Hall	Rocky Mt. African Violet Council Sale
15)*	7:30 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society
16)*	9:30 a.m.	Education Building—Classroom B	Parks & Rec. Dept.
16)*	3:30 p.m.	D.B.G. House—Dining Room	Travel Committee Meeting
16)*	7:00 p.m.	Education Building—Classroom C	"Backyard Beekeeping for Beginners"—Nancy Gripman
16)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
17)*	12:00 m.	D.B.G. House—Dining Room	Public Relations Committee Meeting
17)*	12:30 p.m.	Education Building—Classroom A	Staff Gardeners Workshop
17)*	3:00 p.m.	Education Building—Greenhouse	"Trough Gardening"—Stan Metsker
17)	7:30 p.m.	Education Building—Classroom A	American Rock Garden Society
18)*	4:00 p.m.	D.B.G. House—Dining Room	Chatfield Committee Meeting
18)	7:30 p.m.	Education Building—Classroom B	Indoor Light Gardening Society
19)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
19)*	8:00 p.m.	Education Building—Mitchell Hall	Denver New City Opera Co. Concert
20)	1:30 p.m.	Education Building—Classroom C	"An Approach to Dynamic French Intensive Horticulture"—Lawrence Hershman
22)	9:30 a.m.	D.B.G. House—Main Room	Ultra Violet Club
22)*	7:30 p.m.	Education Building—Classroom B	The Nature Conservancy
23)*	12:00 m.	Education Building—Herbarium	Herbarium Committee Meeting
23)*	7:00 p.m.	Education Building—Mitchell Hall	Annual Membership Dinner

Calendar of Events (cont.)

24)* 9:30 a.m. Education Building—Classroom B
24)* 10:00 a.m. Education Building—Classroom A

Staff Gardeners Training
“The Outdoor Gardens at 1005 York Street”—
Volunteers and Staff

(This class continues on Wednesdays at 10:00 a.m. through April 14)

24)* 1:00 p.m. D.B.G. House—Dining Room
24)* 5:30 p.m. Education Building—Classroom A
25)* 9:30 a.m. Education Building—Classroom B
25)* 10:00 a.m. D.B.G. House—Parking Lot
25)* 10:00 a.m. D.B.G. House—Main Room
25)* 3:00 p.m. D.B.G. House—Dining Room
25)* 7:30 p.m. D.B.G. House—Main Room
26)* 9:00 a.m. Education Building—Mitchell Hall

Guides Tea
Women in Mining—Workshop
African Violet Society of Denver
“Winter Nature Walk”—Dr. Helen Zeiner
Around the Seasons Club
Horticultural Advisory Committee Meeting
Men’s Garden Club of Denver
Ikebana International

MARCH 1982

2)* 9:30 a.m. Education Building—Classroom A
2)* 1:00 p.m. Education Building—Classroom B
2)* 1:00 p.m. D.B.G. House—Dining Room
2) 7:30 p.m. Education Building—Classroom B
3)* 9:30 a.m. Education Building—Classroom B
3)* 4:00 p.m. D.B.G. House—Dining Room
3) 7:30 p.m. Education Building—Mitchell Hall
4)* 12:00 m. Education Building—Classroom C
4) 7:45 p.m. Education Building—Mitchell Hall
5)* 11:00 a.m. D.B.G. House—Main, Dining Rooms
6)* 9:30 a.m. Education Building—Classroom B

* *Members or Enrollees only.*

Parks & Rec. Dept.
“Hardy Ferns”—Panayoti Callas
Editorial Committee Meeting
Denver Bonsai Club
Staff Gardeners Training
Planning Committee Meeting
U.S. Forest Service Open Forum
Staff Gardeners Training
Denver Orchid Society
Civic Garden Club
Gloxinia Gesneriad Growers

Help Please

The Historian of the Associates has a request of all members. If anyone sees photographs or news items concerning the current activities of the volunteers at the Gardens, she would very much appreciate your clipping the article. Please mail or drop it by 909 York, Denver 80206 marked attn: Historian. Thank you.

Thank you! Thank you!

To our many members, public spirited citizens and corporations who responded so generously to the Annual Appeal, a gift in addition to membership dues. Your contribution does “make a lasting difference”—YOU may take pride in your investment: Denver Botanic Gardens.



Green Thumb Newsletter is published monthly by the Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editors is 2:00 p.m. on the 10th of each month preceding publication. Editor—Margaret Wallace, 575-2548.



Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2548

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February 1982

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Green Thumb Newsletter



Number 82-3

March 1982

A Special—Just for Members!

An Introduction to Rocky Mountain Horticulture

March 20, 1982, John C. Mitchell Hall

9:00 - 9:30 Coffee

9:30 - 9:45 Welcome and General Remarks

Mr. Merle Moore, Denver Botanic Gardens Director

9:45 - 10:45 Rocky Mountain Soils

Mr. Gary Niederkorn, Extension Agent,
Horticulture

10:45 - 11:45 Your Home Vegetable Garden

Mr. John Brett, Community Gardens Coordinator,
Denver Botanic Gardens

11:45 - 12:45 Brown Bag Lunch (bring your own, coffee and tea
provided)

12:45 - 1:45 Trees and Shrubs for Your Home

Mrs. Gayle Weinstein, Botanist-Horticulturist,
Denver Botanic Gardens

1:45 - 2:45 Mile High Rose Gardening

Mrs. Linda Brown, President Denver Rose Society

2:45 - 3:45 Your Perennial Garden

Mrs. Peg Hayward, Volunteer, Denver Botanic
Gardens and Mr. Andrew Pierce, Assistant
Director, Denver Botanic Gardens

Yes, I will attend the special Members Workshop on March 20,
1982, 9 a.m. to 3:45 p.m. Enclosed is my check for \$5 per person.
\$_____

Name _____
Last First

Address _____
Street City Zip

Telephone _____
Home Business

Please return to Denver Botanic Gardens, 909 York, Denver, CO
80206 before March 15th. Make checks payable to Denver Botanic
Gardens.

Update on England and Scotland Tour Sunday, March 28

At the time of this writing there remain a few spaces on the
June 4-21 tour of the *Great Gardens and Houses of England and
Scotland*. If you are interested in joining the group contact Jim
Holme immediately at (303) 697-9795 and let him know. He will
see that you receive the application materials and a complete tour
itinerary.

An informal meeting of those interested in and/or planning to go
on the tour will take place at 3:00 p.m. at Botanic Gardens House,
909 York Street, on Sunday, March 28. Jim and Alice Holme and
Merle Moore will be on hand to discuss specifics of the tour and
answer questions you may have regarding weather, appropriate
clothing, currency and related items. In addition, slides (different
from those shown in January) of some of the gardens to be visited
will be shown.

Circle 17 — A Report from the Director on “Free Days” for Non-members in 1982

The Denver Botanic Gardens has announced the dates of seven
free days for 1982. The Gardens will be open with no admission
charged to *residents of the City & County of Denver* beginning with
St. Patrick's Day, March 17, when the first signs of an
awakening spring will be evident in the Rock Alpine Garden. Five
of the remaining free days will fall on April 17, May 17, June
17, August 17, September 17. The last free day in 1982 will
come on October 17 when the cool autumn nights will paint the
Gardens' foliage in brilliant hues of red, orange, and yellow. So go
to your calendar now and Circle 17.

While the City Council has restricted *free* admission on those
days to *Denver residents only* this provides a unique opportunity
for you, as a Botanic Gardens member, to introduce your Denver
friends and neighbors to the beauty and many educational
opportunities to be found at the Gardens throughout the year. I
hope many of you will invite someone you know who lives in
Denver but has not yet become a member of the Gardens to be
your guest for a visit on one of the special CIRCLE 17 days. Not
only would it provide a pleasant outing for you and your guests,
but it might just provide the incentive for them to become active in
supporting the Gardens through membership.

Don't forget—Circle 17 and invite your Denver friends and
neighbors to come grow with us! As a Botanic Gardens member
EVERY day is a free day for you!

Merle M. Moore
Director

P.S. Another reminder—dial 575-2547 anytime for a recorded
message on upcoming events at the Gardens.



Green Thumb It at the Gardens

The gardening staff has been decreased by budget cuts. If you
(Associates and Members) have a little spare time and could use
some exercise and fresh air, why not help us and get that exercise
by planting and weeding with our gardeners? That way both of us
are helped. Call Harriett McMillan, 420-4509 if you wish to
volunteer for weeding and planting. Thank you.

Welcome New Members

Ms. Diane Jo Andrich
Dair R. Banks
Carol L. Barber
Betsy A. Barbour
Rhonda M. Bartman
Mr. & Mrs. George Wallace Bayne
Mr. & Mrs. David H. Bishop
Mr. & Mrs. Robert J. Bishop
Mr. & Mrs. Alex Bissett
Brooks Bond
Madella E. Botnan
Mr. & Mrs. R. E. Bravo
Mr. & Mrs. James A. Burnett
Nancy Murdock Carney
Miles T. Carson
Mrs. Dorothy F. Chandler
Bertram & Judy Chang
R. E. & Martha Cloughley
Mr. & Mrs. Erik Collett
Linda C. Collins
Jett & Rosemary Conner
Mary Crary
Myrene A. Dammann
Tyson Dines III
Dr. & Mrs. Robert S. Dobrin
Mr. & Mrs. George L. Downing
Madeline M. Ebert
K. Erickson
Mr. & Mrs. Stephen J. Forest, Jr.
Mr. & Mrs. M. John Francis
John Q. Gaddis
V. R. Gagnon
Gwen Goodbee
Mr. & Mrs. R. J. Gragg
Sharman L. Green
Stephanie A. Gregory
Dr. Stewart Greisman
Mr. & Mrs. Jean C. Guiet
Mr. & Mrs. Gordon E. Gumble
Wendy Hallett
Dr. Alvin Hamilton
Mr. & Mrs. Theodore O. Hammond
Mr. & Mrs. Thomas G. Harmon
Lawrence Hershman

Barbara Hills
James Hinkle
Mrs. Phyllis A. Hobson
Mr. & Mrs. Robert B. Hoffman
Dr. & Mrs. Richard E. Holman
Mrs. Geneva I. Holmes
Alfred J. Hoover
Mark A. Horney
Mr. & Mrs. R. Camden Hugie
Mr. & Mrs. Morton P. Iler
Ms. Katusha Issaeff
Mr. & Mrs. Harold W. Johnson, Jr.
Mrs. Leon Keith
Rev. & Mrs. Gordon Kieft
Brian Kimmel
Mr. & Mrs. John Knetemann
Ms. Frances A. Koncilja
Mrs. Pauline Kotin
Mrs. Patricia S. Kremers
Mark R. Lange
Jordis Langness
Mr. & Mrs. Joseph M. Lanterman
Charles E. Larson
Richard Lehmann
Mr. & Mrs. Ralph S. Lowenstein
Richard L. Lunnon
Mr. & Mrs. Bruce R. McAllister
Mrs. Anna McComas
Mrs. Charlotte McGee
Ms. Cindy McGonagle
Mrs. Sandra Kae McKone
Mr. & Mrs. Richard R. McLellan
Stuart H. Macdonald
Mrs. Jessie Martin
Robert R. Martz
Nita Cobb Martin
Mrs. Mereth M. Meade
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Mila Mitchell
Mr. & Mrs. Don Morris
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Mr. & Mrs. Kenneth R. Mullin
Mrs. Harriet G. Neiman

Mr. & Mrs. William R. O'Hayre, Jr.
Connie Paulson
Mr. & Mrs. S. M. Payne
Bruna L. Pedrelli
Mr. & Mrs. Victor A. Petersen
Margaret Pio
Mr. & Mrs. William T. Porter, Jr.
Mr. & Mrs. Tony Pranaitis
Ray Radebaugh
Mr. & Mrs. Charles Radosevich
Carl J. & Marcella L. Rautus
Drew Reekie
Nancy Rettig
Glenn & Litizia Ritter
Mr. & Mrs. Jacques F. Robertson
Mr. & Mrs. F. Lee Robinson
H. Rodman
Maria Romano
Tina Rowe
William C. Ruth II
David J. Savory
Paul & Lynn Savageau
Mrs. Halima F. Sayyid
Diana Schroeder
Thomas & Regina Shorb
Janet Short
Mr. & Mrs. Elmer E. Simmons
Mr. & Mrs. Charles Squires
Mr. & Mrs. Alva Terry
Mrs. Stella W. Straup
Mr. & Mrs. W. Patrick Sullivan
David W. Thomas
Mrs. Betty A. Thompson
Mrs. Betty Timson
Mr. & Mrs. Vern Vaudrin
Mrs. Margaret Wade
Tonya Walerko
Mrs. Beverly Walker
Mr. & Mrs. Thomas R. Walters
Martha Ann Weber
Sandra I. Weingarten
Keith A. Williamson
Mrs. Isabel E. Wolf
Ms. Chriss Wright

Tributes

- In memory of Lura Atanasoff**
Friends at 1165 Columbine
- In memory of Margaret Drake Clark**
Mr. and Mrs. Theodore A. Boerstler
- In memory of Kim Sterne**
Mr. and Mrs. Bruce Sterne
- In memory of Mrs. F. C. Vetting, Sr.**
Mr. and Mrs. Fred C. Vetting, Jr.
- In memory of Meghan Elizabeth White**
Judith White and Jack Root

Contributions of cash, goods, or services have been received from the following friends:
Donald and Elizabeth Estey
Indoor Light Gardening Society, Denver Chapter
Mrs. Mary Klinger
Roadposter

The Lady of 1001 Gardens! Jane Silverstein Ries

The title is somewhat misleading as “Miss Jane,” as she is affectionately known, has designed more than 1,500 gardens since she graduated from Lowthorp School of Landscape Architecture for Women in Gorton, Mass. almost 50 years ago. Today she is Colorado’s “First Lady” of landscaping and recently at the 23rd Annual Garden and Home Show she was selected for The Woman of The Year Award.

Here at the Gardens we have been very fortunate to have had association with her over several years. She has created major design work in the Herb Garden, basic design in the Plains Garden and recently she completed our new Scripture Garden.

Denver Botanic Gardens congratulates you, Jane, for giving us and Denver artistry for enjoyment and gardens to love.

**MEET THE STAFF—LOOK FOR
THEIR PICTURES IN THE LIBRARY.**

GARDENING TIPS FOR MARCH

Plants are a major material in landscape design. Proper designing with plants is more than putting a bush or tree here and there. It requires understanding the qualities and environmental needs of each plant selected and placing them in a manner that will be pleasing to the eye as well as attain reasonable maintenance. This constitutes *composition*.

Good composition involves consideration of each plant as to its *form, growth habit, texture* and *color*. Ask yourself; What is the over-all effect of buildings—their form and lines that you must blend with, complement, or screen? Take a close look at the *total environment* in which the plants must cohabitate. This means investigating the ecological requirements of the plants—their soil tolerances, needs for sunlight and/or shade and other growth factors peculiar to the plants. These considerations will not be discussed here because they are another subject in itself. Instead, we'll concentrate on the design composition aspects, namely, form, growth habit, texture and color.

Form

The form of a plant is the general outline or shape that it has. Form is best visualized as silhouettes to eliminate the color, texture and other features which will be considered separately.

There is a definite relationship between the plant form and the topography in nature's landscape compositions. In the mountains, for instance, conical shapes tend to dominate—as in spruce and fir. On the rolling prairies plants are rounded or even horizontal. This relationship can be used in your own landscape to attain the setting or effect desired.

This, of course, does not mean that you use plants all of one shape. Such would be poor design composition. You might, however, consider one shape to be the general and dominant type.

Basic plant forms are columnar, rounded, weeping, vase, conical (sometimes incorrectly termed pyramidal) and oval. Keep in mind that of these shapes, narrow columnar plants, like the Lombardy poplar and conical, as in spruce, will tend to dominate and can be easily overdone. When used with discretion, such plant shapes can draw the viewer's eye *to* a desirable view—or—they can be used to draw the eye *away* from undesirable views.

Growth Habit

Growth habit is often confused with form but differs in that it describes the branch pattern and branch angles in a plant. To be sure, these characteristics of a plant tend to dictate form. A plant with weeping branch habit may also have a weeping form. It may also take on a rounded form. Columnar trees may have a narrow upright branch pattern or a truly fastigiate branch habit. If you look closely at several blue spruce in the area, you will find most have a conical form but the growth habit may be gracefully sweeping branches, horizontal branching or even quite upright branching. Thus it is possible to have two plants of the same form and widely differing growth habit. Using plants of nearly the same form but different growth habits can add variety and interest to the over-all effect of the landscape.

Texture

Probably the most over-looked in design composition is plant texture. One reason is that it is more complicated than the concept of form and growth habit and changes even in the same plant depending upon light and the distance from which the plant is observed. In simple terms, texture is a plant's coarseness or fineness, roughness or smoothness, heaviness or lightness.

The texture of leaves depends not only on their size but their spacing, color or shade, and even glossiness. For example, large leaves that are glossy, will generally have the effect of finer texture than dull leaves of the same size because of the effect of light reflecting from them. Leaves with long petioles or slender shapes generally look finer textured than those with short, stout

petioles. The latter have the effect of strength and coarseness. Leaves with finely divided lobes, as in the Wieri or cutleaf maple will have finer texture than those with coarser lobes or not lobed at all.

Foliage density plus coarseness will create an effect of strength. Sparse, open foliage will be a weaker effect.

As you consider texture, don't overlook the texture effects brought about by deciduous plants in winter. The finely-branched pattern of an elm vs. the coarseness of a Kentucky coffeetree are extremes that can be used in interesting ways in a landscape composition.

When using texture changes in a landscape, always do so in a gradual rather than abrupt way. Move from coarse to fine using intermediates in between. As you move to plants of finer texture, use proportionately larger numbers of plants. Example: 1 coarse plant to 3 intermediate to 5 or 7 fine-textured. Space, of course will dictate how gradual the change can be.

Good planting design usually also uses coarser textured plants to strengthen corners, more finely-textured plants in open or mass plantings. Avoid coarse textures in small areas. They tend to decrease apparent size of area.

Color

Color of foliage and twigs, branches and bark need consideration. Too often, a plant is selected on the basis of flower color alone. This is a mistake in design composition. Remember, flowers last only a short time. They deserve only minor consideration.

Color of foliage, twigs and bark can be chosen to accent, blend or contrast. Keep in mind that *white* will dominate over everything else. The white bark of a European birth will draw *immediate* attention. This can be good or bad depending on plant placement in relationship with the rest of the planting and the dwelling. Bright yellows and orange will also tend to dominate. The yellow twigs of the yellow-twigg dogwood will stand out in winter. Orange fall color in maple or Ohio buckeye will provide a changing focal point for fall.

Some Basic Guidelines

Keep composition simple. Simplicity is attained through tasteful selection of plants of *repetition*. Avoid the "botanical collection" of one of each. By the same token, be careful with *how* you repeat plantings. For example, it would be monotonous and poor composition to alternate a Tammy juniper with a redleaf barberry over and over again along the front of a house. This practice, however, is very common. A grouping of plants in a spot, repeated again somewhere else while still maintaining balance in the landscape would be better.

Plants used in groups, whether trees, shrubs or groundcovers, should be in cultivated beds rather than individually surrounded by lawn. It is more natural and reduces maintenance.

Once you've decided on form, growth habit, texture and color, select the plants that fit your requirements for space (both vertical and horizontal) as well as soil and exposure. This usually requires much research—thumbing through catalogs, books, extension pamphlets and the like. The time taken, however, will be well spent and result in a composition that, like good music, will soothe and refresh.

—Dr. J. R. Feucht

Botany Club, March 19, 7:30 p.m. Classroom C

A slide show entitled "Alpine Plants around the World" will be presented by Panayoti Callas. All welcome.



Around and About the Garden

The Japanese Garden, through the cold of winter, has been much like a painting—it has been quiet and still. The only true signs of life have been the many majestic pine trees that frequent the landscape. It is during this season that the structure and design inherent to a true Japanese garden become vividly accented. Garden pathways of rock and stone facilitate the stroll, as the vision is carried from wooden bridges to stone lanterns to the tea house and back to the trees. Outlines of weeping birch and willow soften the sky. There is a true spatial balance, elegant and light.

A change in the seasons will present the evolvement of the entire garden, characterized by unity and harmony, rapid as it proceeds. It is the determination of the buds that makes it all so incredible—the determination to reveal their innermost workings and be what they can be—a lesson for us all!

At times in the city it is hard to find a quiet place to go. Shofu-en, Garden of the Pine Wind, can offer just such a place. In the Japanese Garden you can experience the impending change of the season. You can actually feel the anticipation of the natural participants waiting as musicians, for the conductor's baton to rise. A symphony is in store for those who come to enjoy.

Susan Praetz
Gardener Florist II

Ikebana To Celebrate 20th Anniversary

Ikebana International of Denver will celebrate 20 years of "friendship through flowers," their international motto, on March 26 in John C. Mitchell Hall. Besides promoting and raising funds for the Japanese Garden, they have cooperated with Denver Art Museum for special Oriental exhibits, participated in local Japanese festivals, and are now planning an international conference on October 12 through 16 at the Brown Palace Hotel. Arrangements made for the anniversary celebration will be left on display on Saturday, March 27, in the Hall.

New Members of the Board of Trustees

Mr. Richard A. Kirk, President of the Board of Trustees of the Denver Botanic Gardens, has announced the names of the new members recently elected to the Board. Congratulations and welcome to Mrs. F. V. Altvater, Mrs. William Collister and Mr. Morgan Smith.

Good News

The 1982 annual PLANT SALE will take place at the Gardens on Friday and Saturday, May 7th and 8th, prior to Mother's Day. Volunteers wanting to help gather books, run cash registers, help inform the public and work during the sale, please call Mrs. Theodore Wrenn (733-5749).

Mrs. Willett Moore, Chairman, and Mrs. Thomas Faxon, Co-Chairman, held the first meeting February 3 for all plant division leaders. New and exciting materials will be available as well as the "tried and trues"! Mark your calendars for this spring event!

Rainbow of Violets

The Rocky Mountain African Violet Council presents its 20th Annual African Violet Show and Sale at the John C. Mitchell Hall of the Denver Botanic Gardens Saturday, April 3 from 1 p.m. to 4:30 p.m. and Sunday, April 4 from 10 a.m. to 4:30 p.m. For further information, please contact: Judy Ann McClarnon, Publicity Chairman, 7471 S. Clermont Drive, Littleton, CO 80122, 773-6212 (H), 321-1930 (O).

Spring Auction Of Orchid Plants By Denver Orchid Society

Thursday, March 25, 1982

Doors open at 7:00 p.m., Auction begins at 7:45 p.m.

Mr. Howard Frase of Professional Auction Services will lend his talents to our annual fund raising event. This auction will offer you and your friends the chance to purchase a wide variety of orchids, many suitable for windowsill culture. This is a perfect introduction to a fun and exciting hobby! There will be literature on growing orchids free of charge to plant purchasers and many members in attendance to answer any questions. Plan on attending a fun evening!

Landscape School on March 22 and 23

Colorado Federation of Garden Clubs is presenting a nationally-coordinated Landscape School, March 22-23 at 1556 Emerson Street, Denver. The purpose is to educate members and the public to know good landscape architectural practice and to serve as guardians and critics of outdoor beauty. For information call Mrs. Margaret Molloy, 985-3267; Mrs. Robert Kosanke, 238-2998; or Mrs. W. D. George, 444-3045.

Can You Help?

Volunteers are needed by the Division of Wildlife to lead or assist with outdoor learning activities at Barr Lake and Roxborough State Parks. For applications and information call 659-6005 or 797-3986.



GREEN THOUGHTS. Eleanor Perenyi
Random House, New York. 1981.
SB 453.5 P4745

Thirty years of gardening, and thirty years of reading and reflecting on gardening have gone into the making of this fine collection of essays. The writings range from extensive research on herbs, tulips, petunias, asparagus, ivy and evergreens to discussions of the broader issues implied in gardening. Some important points discussed are the way the marketing of annuals reflects the values of a contemporary throw away culture, and the influence pesticide companies have on the availability of certain types of seeds. Particularly interesting is the chapter on women and gardening. Her ideas on this topic are a discerning commentary on women's history in gardening, purporting its use in keeping women in their allegedly proper place. Although her experiences come from a Connecticut garden, Colorado gardeners can learn from her. She gives reasons for her conclusions and is adamant about trusting one's own observations over experts' recommendations. Perenyi is a professional writer. Thus the reader can enjoy both an artist's use of language and the wisdom of a seasoned, thinking gardener.

Mary Waters

ALL ABOUT LANDSCAPING. Lin Cotton.
Ortho Books, San Francisco, California. 1980.
SB 473 C6776

This excellent guide goes beyond the usual self-help book in scope and content. Cotton, a landscape architect, presents his professional ideas in landscape design and construction. The book is intended to help the reader design and build a personal landscape—one that considers practical needs, environmental assets and problems, and personal preference. It can save frustration and money whether the project is self-designed and constructed or professional consultation is obtained. Landscape styles, design elements, materials, construction estimates, permits and scheduling, and installation sequence are discussed. Four-color photographs and drawing support the detailed discussion with emphasis on the principles of design and construction rather than replication of another design. Cotton's enthusiastic, confident style favors the reader's success. He provides good advice, perceiving the emotional reactions inherent in this complicated process—worry, joy, satisfaction, impulse. However, a realistic assessment of the range and level of technical skill is not provided to the reader. Also, he does not discuss when professional assistance should be sought. Consequently, insufficient knowledge can produce some potentially costly mistakes, and no warnings are given indicating where problems may occur. Despite these shortcomings, this guide is recommended as one of the best to build basic concepts in landscape design and promote confidence.

Jan Caniglia

FARMLAND OR WASTELAND. R. Neil Sampson
Rodale Press, Emmaus, Pennsylvania. 1981
S624 A1 S3567

This book reflects the author's extensive research and personal experience in agricultural and natural resource issues. His contention that America does have resource limits calls for the need for conservation action now in the use of its resources. Sampson reviews America's present position and the imminent dangers ahead if greater emphasis on soil conservation is not observed. "Farmland or Wasteland" is an assertion of vital statistical facts. Every day 26 square miles of U.S. topsoil is washed or blown away under present farming practices. Every hour 200 more Americans require being fed while 220 acres of farmland are lost to urban builders. Sampson predicts that in less than 100 years, all productive farmland will be lost under these conditions. He anticipates slow social change because of pressure on farmers to produce more for various political reasons, such as trade deficits. This accurate and enlightening portrayal of agricultural and natural resource practices in the U.S. promises to stimulate the reader's support for soil and water conservation.

Ed Dennis

CACTI AND SUCCULENTS FOR THE AMATEUR.
Charles Glass and Robert Foster.
Blandford Press, U.K. 1977 or
Abbey Garden Press, Santa Barbara, California. 1976.
SB 438 G538

The beginning cactus collector will appreciate this well organized and illustrated paperback guide. It includes an explanation of taxonomic systems, propagation, pests and diseases, labeling, and obtaining plants from commercial sources. The cactus family and its allies are discussed in greater detail. While not encyclopedic, the black and white photographs offer a stimulating cross section of available varieties. My only criticism of this book is that it does not adequately discuss the problems of cactus collection in the wild, and the related problem of protecting threatened and endangered species.

Jeffrey Pecka

SUCCESSFUL SOLAR ENERGY SOLUTIONS.
Spruille Braden III and Kathleen Steiner.
Van Nostrand Reinhold Co., New York. 1980
TH 7413 B7334

This 302-page book contains 85 examples of solar designed structures. Sizes range from a 550-square foot residential unit with a greenhouse in Arizona to a 300,000-square foot community college in Colorado. Useful and informative photographs, schematic

diagrams, and floor plan drawings accompany the spatial and mechanical descriptions. Buildings presented are a wide range of active and passive solar system solutions in residential, commercial and public buildings. Descriptions of predominant climatic regions in the U.S., solar energy systems, and solar organizations comprise Appendixes A, B, and C. Appendix D lists 558 solar equipment manufacturers coded by their general equipment and accessory categories.

Wayland Walker

THE BIOLOGY OF THE BROMELAIDS. David H. Benzing. Mad River Press, Eureka, California. 1980. QK 495 B76 B4695

With the exception of basic plant culture, this book covers every aspect of the Bromeliad family important to one who wishes to learn about these plants. Subjects range from bromeliad history to an in-depth look at the inheritance of plant characteristics. As a bromeliad grower, I think this book is interesting and very informative. Benzing's research and organization are of high quality. If you have grown bromeliads before, or if you have a particular interest in this plant family, this book is a must. If you are a beginner, it would be better to start with something less technical.

Gary Davis

GREEN WISDOM. Arthur W. Galston. Basic Books, Inc., New York. 1981. QK 81 G357

In "Green Wisdom" the author promotes the "functional wisdom built into all living" plants, and their ability to survive adverse environmental influences. Galston explores basic physiological plant processes through discussions of life, growth and defense mechanisms in a simple, well-written style. He provides a basic understanding of plant phenomena, preparing the reader for his questions on the biological issues facing man and their social consequences; i.e., genetic engineering, organic and synthetic diets, cancer, etc. Galston's ability to translate complex scientific processes for the lay reader into personable coherent explanations is his literary talent. I felt keenly interested in this book during my review and predict the reader will share a similar reading experience.

Genevieve M. Kruzel

JACKIE'S INDOOR OUTDOOR GARDENING CHARTS.

Jacqueline Hostage.

Betterway Publications, White Hall, Virginia. 1981.

SB 453 H6782

For those interested in general indoor/outdoor garden basics, this book utilizes guide charts to convey step-by-step information. The last section illustrates the use of a monthly guide designed to organize gardening activities and to encourage the gardener to plan ahead for the seasons. Though this book is not an encyclopedia on gardening, it is a practical one for the beginning gardener.

John L. Cretti



THE REVIEWERS

Mary Waters—Research Technician in botany, Colorado State University.

Jan Caniglia—Land Planner, HOH Associates, Inc.

Ed Dennis—State Range Conservationist, Soil Conservation Service, U.S.D.A.

Jeffrey Pecka—Landscape Architect and Environmental Planner, Gibbs & Hill, Inc.

Wayland Walker—Solar Design Consultant, Member of Board of Directors of Denver Solar Energy Association, Program Manager of City of Denver's Energy Task Force Project.

Gary Davis—Gardener Florist II, Denver Botanic Gardens.

John L. Cretti—Colorado State University Denver Extension Horticulturist

Genevieve M. Kruzel—Editor

Solange G. Gignac—Librarian

BOOK SALE—May 7 and 8. Books are still needed. To donate books for the sale, please call 575-2548 for pickup, or deliver to the Helen Fowler Library of the Denver Botanic Gardens.

Calendar of Events



March 1982

1)*	7:00 p.m.	Education Building—Classroom A	“Vegetable Gardening”—John Brett
2)*	10:00 a.m.	Education Building—Classroom B (This class continues on Tuesdays at 10:00 a.m. through March 30)	“Art in Nature”—Dr. Oksana Ross
2)*	1:00 p.m.	Education Building—Classroom B	“Hardy Ferns”—Mr. Panayoti Callas
2)	7:30 a.m.	Education Building—Classroom B	Denver Bonsai Club
3)	10:00 a.m.	Education Building—Classroom A (This class continues on Wednesdays at 10:00 a.m. through April 14)	“The Outdoor Gardens at 1005 York St.”
3)*	7:00 p.m.	Education Building—Classroom B (This class continues on Wednesdays at 7:00 p.m. through March 31)	“Beginning Greenhouse Management”—Ms. Marsha Celesta
3)	7:30 p.m.	Education Building—Mitchell Hall	U.S. Forest Service—Open Forum
4)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
5)*	9:30 a.m.	Education Building—Classroom C	Denver Public Schools
5)*	11:00 a.m.	D.B.G. House—Main Room	Civic Garden Club
6)*	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
8)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
9)*	7:00 p.m.	Education Building—Classroom C	“Backyard Beekeeping”—Nancy Gripman
9)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
10)	10:00 a.m.	D.B.G. House—Main Room	D.B.G. Guild
11)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
12)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
13)	9:30 a.m.	Education Building—Mitchell Hall	Rose Symposium
13)*	9:30 a.m.	Education Building—Classroom A	Colorado Native Plant Society
13)*	All Day	Education Building—Classrooms B & C	National Science Foundation
15)	7:00 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society
15)*	7:30 p.m.	Education Building—Classroom B	The Nature Conservancy
16)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
17)	7:30 p.m.	Education Building—Classroom A	American Rock Garden Society
18)	7:30 p.m.	Education Building—Classroom B	Indoor Light Gardening Society
19)*	8:00 a.m. - 12:00 noon	Education Building—Mitchell Hall, & Classrooms A and C D.B.G. House—Main Room	ROMCOE—Metro Water Round Table
19)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
19)	7:30 p.m.	Education Building—Classroom C	Denver Botany Club
19)*	8:00 p.m.	Education Building—Mitchell Hall	Denver New City Opera Co.
20)*	9:30 a.m.	Education Building—Classroom B	Hi Country Judges Workshop
20)*	1:00 p.m.	Education Building—Classroom B	Rocky Mt. African Violet Council— Nominating Committee Meeting
21)	1:30 p.m.	D.B.G. House—Main Room	American Hemerocallis Society
22)	9:30 a.m.	D.B.G. House—Main Room	Ultra Violet Club
23)*	4:00 p.m.	D.B.G. House—Main Room	Board of Trustees Meeting
23)*	7:00 p.m.	Education Building—Classroom C	Community Gardeners Introductory Class
24)*	12:00 m.	D.B.G. House—Dining Room	Colorado Garden Show, Inc.
25)*	9:30 a.m.	Education Building—Classroom B	African Violet Society of Denver
25)*	10:00 a.m.	D.B.G. House—Main Room	Around the Seasons
25)	7:00 p.m.	Education Building—Mitchell Hall	Denver Orchid Society—Orchid Auction
25)*	7:00 p.m.	Education Building—Classroom C	Community Gardeners Introductory Class
25)*	7:30 p.m.	D.B.G. House—Main Room	Men’s Garden Club of Denver
26)*	9:00 a.m.	Education Building—Mitchell Hall	Ikebana International
27)*	9:15 a.m.	D.B.G. House—Main Room	Rocky Mt. African Violet Council
27)*	9:30 a.m.	Education Building—Classroom C	“How to Have a Beautiful Lawn”—Mr. Joseph Tomocik
27)	10:00 a.m.	Education Building—Mitchell Hall	Idebana International—Arrangements
31)*	9:00 a.m.	Education Building—Classroom B	“Preparing Spring Baskets”—Nerys Hammond

APRIL 1982

2)*	12:00 m.	D.B.G. House—Main, Dining Rooms	Civic Garden Club—Annual Tea
3)	9:00-4:45	Education Building—Mitchell Hall	Rocky Mt. Council—AFRICAN VIOLET SHOW
4)	9:00-4:45	Education Building—Mitchell Hall	Rocky Mt. Council—AFRICAN VIOLET SHOW
5)*	9:30 a.m.	Education Building—Classroom C	“Anatomy of a Compost Heap”—John Brett
6)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
7)*	10:00 a.m.	D.B.G. House—Main Room	Plant Sale Committee Meeting

Calendar of Events (cont.)

8)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
8)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
9)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
10)	9:00-4:45	Education Building—Mitchell Hall	Colorado Cactus & Succulent Society—SHOW AND SALE
10)*	9:00 a.m.	Education Building—Classroom B	“Spring Flowering Plants of the Denver Area”— Dr. William Gambill
11)	9:00-4:45	Education Building—Mitchell Hall	Colorado Cactus & Succulent Society—SHOW AND SALE

*Members or Enrollees only

Classes

Get a head start on the season by signing up now for *Starting Plants from Seed*. Our plant propagator will meet 15 students on March 11 at 9:30 a.m. in the propagation room near the greenhouses. The cost is \$2.00.

The *Rose Symposium* on March 13 at 9:30 a.m. in the Hall is planned to be of help to all new gardeners to Denver who wish to be successful with their roses. Experts from district rose societies will be on hand to explain about culture throughout each month of the year. Free and all welcome.

A member of the staff, Joe Tomocik, will explain the fine points in having a *Beautiful Lawn* on March 27 at 9:30 a.m. in Classroom C. A tour of the Gardens’ turf plots will complete the class. The cost is \$4 for members, \$7 for nonmembers.

Finally, the March classes will end with students *Preparing Spring Baskets* on March 31 from 9 to noon in Classroom B. Please bring scissors and a medium-sized basket with a handle. All else will be provided for the fee of \$14 for members, \$20 for nonmembers. Limit 15.

Landscape Design Symposium

Again this year the Adams County Extension Office will sponsor a 3-week Landscape Design Symposium for Home Owners. Speakers at this event include Jim Feucht, Gary Niederkorn, Jane Silverstein Ries, Al Rollinger and Larry Watson—well known authorities on landscaping in the Denver area. The class starts on March 16 and continues on the 23rd and 30th from 7 to 10:30 p.m. at the Rodeway Inn, I-70 at Quebec. Registration is \$16. For further information please contact Gary Neiderkorn at 659-4150.



Green Thumb Newsletter is published monthly by the Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editors is 2:00 p.m. on the 10th of each month preceding publication. Editor—Margaret Wallace, 575-2548.



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TIME VALUE

March 1982

Address correction requested



Gardening Tips for April

With springtime in the Rockies, gardeners are now turning to the busy activities outdoors getting the garden ready for bedding plants and perhaps considering some changes in the overall garden layout.

Conservation of water is still a critical item and you might want to take a look at your overall landscape and see where you can reduce the amount of water needed and still maintain an attractive landscape.

Many are looking towards some of the native grasses to help solve this problem. Buffalograss seems to be high in the minds of many gardeners. While Buffalograss is a native, some caution is needed in its use. First of all, it is a disappointment to those who still envision a smooth, green carpet most of the year. If you're lucky, Buffalograss will stay green for about four months. It is a warm-season grass and turns a straw color at the first killing frost and remains this way until the soil warms up in late May or early June. It may also go dormant and brown in the hottest part of the summer unless supplemental water is given.

Another problem associated with Buffalograss as well as a few of the other natives such as Blue Gamma, is that the normal weed control chemicals available, if applied at the rates on the label, can severely injure them. Usually it takes much longer to establish a native grass than it would a Kentucky bluegrass lawn. Buffalograss is not available as sod and in fact, because of its deeper root system, does not lend itself well to sod production. The seed is expensive because it is one that is difficult to harvest, producing its seed in burrs near the soil line. Those who have seen Buffalograss growing may think that the plummy heads are the seedproducing heads. These are actually the male portion of the plant.

To establish a Buffalograss lawn may require up to seven pounds of seed per 1000 sq. feet. You can get by with about half that amount but it takes a little longer to fill in. In the meantime, you still have the weed control problem.

Perhaps one of the best places to use native grasses is in the outlying areas away from the dwelling, reserving small areas near and around the home for bluegrass. Sometimes it is desirable to have a transition between the Buffalograss and bluegrass since they are not too compatible together. Generally, the bluegrass will invade the Buffalograss unless, of course, you reduce this tendency by withholding irrigation as long as possible.

A good transition might be in the form of non-grassy ground covers or perhaps even a strip of mulch. When selecting ground covers there are several considerations. First of all, take a look at the site, its exposure and soil conditions. Most ground covers will do poorly in a heavy clay soil. They do even worse if the site is in a hot, south exposure. Amending the soil with aged barnyard manure or other sources of organic material will go a long way towards quick establishment. I find that the best ground covers for an open site that would make a good transition between bluegrass and some of the native grasses are the creeping junipers. Various varieties are available including 'Bar Harbor', 'Wilton' and 'Andorra'. These low creepers will take a full sun exposure and will tolerate the lower water conditions needed to make them compatible with Buffalograss. At the same time, they will thrive with the more frequent irrigation near the bluegrass as long as soil drainage is good. Being evergreen, they also provide year-round cover and do a good job in competing against weeds. If you do get weeds in them, I find that they can be carefully spot-treated using

glyphosate (Roundup) in mid-June without appreciable harm to the junipers.

Other ground covers that you might want to consider for areas of low water might include the sedums or stonecrops, Pink Fleece, flowers *Polygonum renoultia*, Silver Mound Sage and the good, old-fashioned Hen-n-Chicks. The latter can take almost any soil and exposure.

For more ideas on ground covers, request your free copy of CSU Service in Action leaflet #7.400. Drop a card to the author, 909 York Street, Denver, CO 80206.

Dr. J. R. Fench



Good News

Remember him? Come rain or shine he "keeps on cluckin" for the PLANT SALE. He'll be back again this year Friday and Saturday, May 7th and 8th, scratchin' for the choicest berry, the hardiest seedling and the brightest blossom to take back to KIMN. You come, too!

Plant Identification

One of the services of the Denver Botanic Gardens is the identification of plants. In order to make an accurate identification, we must have an adequate specimen. The plant should be in flower since that is the main key to its identity. If the plant is small, bring the entire plant. If the plant is large, bring a cutting (10 to 12 inches if possible) of a leafy stem including flowers. The plant can be brought to us fresh or pressed and dried. The best way to dry a plant for later study is with a plant press. If you would like instructions on how to make a plant press, we would be happy to supply them. If you do not have a plant press, place the plant between the pages of a newspaper and under some heavy books or place the plant between the pages of a telephone book. The plant will dry in a few days. Indicate if the plant is cultivated or not cultivated. Also indicate where and when it was collected. Leave the unknown plant at the Botanic Gardens library with your name and telephone number or a stamped addressed postcard. We will notify you as soon as the plant has been identified.

Around and About The Gardens

Thinking back to the day I came to work here at the Denver Botanic Gardens. . .I reflect on the change that has taken place. Remembering my first day’s work, I wondered why I had transferred to this place that was so bare, and to me, so unattractive at the time. It was overridden with weeds outside, especially bindweed, malva, and poverty weed. On the east side of the wrought iron fence looking north and south there wasn’t much—although a planting program was in progress about then. The year was 1974.

Along Linden Allee there were two annual beds being planted. Also along this major path there were two rows of Greenspire Lindens with blue fescue grass at the north end. This same area has been redone, and instead of bare or weedy areas there are plantings of Blue Spruce, Viburnum, Flowering Plum, Cotoneaster, and many other lovely plants. Looking west we have what we call our amphitheater. It hasn’t changed at all. It is a huge, spectacular-grassy-green depression much used in the summer for concerts. South of here we have a lovely herb garden. A few things have been added since I’ve been here, amongst which are a sun dial, gazebo, and plantings of Forsythia & Cotoneaster, that have changed the appearance tremendously. West of this area we now have a Scripture Garden which did not exist until last year. It is much more attractive than the driveway that was once there.

Continuing west is the Low Maintenance Garden which is also undergoing changes. The fence on the south end has just been moved giving it a more spacious appearance. West of here another area has been developed called the Home Demonstration Garden—converting what used to be an eye-sore into a very appealing sight.

Many other changes have taken place since I first came including the construction of the pergola, the new Peony Garden with its walk composed of wooden squares, and the berms that until the last couple of years were nothing but bare mounds of soil and now are planted with various shrubs and ground covers. Also on the southwest end of the Denver Botanic Gardens’ property, an Alpine Garden has been developed including an Alpine House making this area an important as well as interesting place to visit. From here we go north through the Gates Garden and into what used to be an open, undeveloped area which is now a beautifully landscaped Japanese Garden. In its northeast corner is a tea house. Also added were a bamboo fence and two bridges, all of which gives this area beauty and authenticity.

Other important changes include the addition of Marnie’s Pavilion next to the conservatory on the west side. I have also seen some of our beds raised with the use of railroad ties—such as the vegetable garden and dahlia beds. Some of our open areas have been planted with ground covers and cover crops making it easier to control part of our weed problem. Near the vegetable garden area, turf and ground cover plots have been planted. The Rose Garden has been relandscaped with some of the beds now raised and others sunken, all framed with brick. A pergola was also constructed making this garden much more attractive than before. The Iris Garden has also changed as it has more than doubled in size this year in anticipation of the American Iris Society National Meeting in early June.

In my opinion, what used to be a number of undeveloped area are now well-planned gardens—making it a pleasure to work here.

Frank Chavarria
Gardener Foreman

Tributes

In memory of Ellis Armstrong
Jean Van Loan

In memory of Lura Atanasoff
Evelyn M. Atanasoff

In memory of Ragnar Bramberg
Gloria Falkenberg
Lawrence A. Long

In memory of Miss A. Olivia Hanson
Mr. and Mrs. Barry B. Beal

In memory of Mrs. Maybelle Harl
Mr. and Mrs. Walter C. Emery

In memory of Else Schoenfeld Mr. and Mrs. Hilary Johnson

In memory of Pauline Smith and William F. Smith
Muryl D. Allison

Contributions of cash, goods, or services have been received from the following friends:

Broadmoor Garden Club
Central District President’s Council
Colorado Mycological Society
Jack Herman
Indoor Light Gardening Society of America
Mrs. Dorothy Kaye
Louise Roloff
Union Pacific Corporation
Mrs. James J. Waring
Mr. Robert Wutzke

Rainbow of Violets

THE ROCKY MOUNTAIN AFRICAN VIOLET COUNCIL will present its 20th Annual Show and Sale on Saturday, April 3 from 1 p.m. to 4:30 p.m. and on Sunday, April 4 from 10 a.m. to 4:30 p.m. The Show will be in the John C. Mitchell Hall of the Denver Botanic Gardens, 1005 York Street, Denver, Colorado, and the sale will be in the rooms on the lower level. Photographers are invited to take pictures from 8 a.m. to 10 a.m. on Sunday, April 4, 1982.

For further information, contact:
Publicity Chairman: Mrs. Judy McClarnon

7471 South Clermont Drive
Littleton, CO 80122 773-6212

P.S. Need help in taking care of your purchase? Spend an hour with Isla Montgomery. Call 355-4991 for appointment.

Thought for Arbor Day

Since it is certain and demonstrable, that all arts and artisans whatsoever must fail and cease, if there were no timber and wood in a nation (for he that shall take his pen, and begin to set down what art, mystery, or trade belonging any way to human life, could be maintained and exercised without wood, will quickly find that I speak no paradox) I say, when this shall be well considered it will appear, that we had better be without gold than without timber.

John Evelyn, 1662

Eighth Annual Grassland Institute

The Denver Audubon Society will sponsor its annual Grassland Institute at Pawnee National Grasslands from June 13-19. This is an opportunity to study the short grass prairie ecosystem in all its aspects. For further information call Ed Butterfield, 690-5019

Classes

Anatomy of a Compost Heap is full. John Brett will teach it again this year on April 5 from 9:30 to 11 a.m., Classroom C and outside gardens.

City Floral Greenhouses trip is full. If you have signed up meet at 909 York, April 6 at 8:45 a.m. or at 1440 Kearney at 9 a.m.

Dr. Gambill, our Director Emeritus, will explain the basic concepts of flower identification in *Spring Flowering Plants of the Denver Area*. This class starts on April 10 and continues each Saturday (except May 8) until May 22, from 9 a.m. to 11:30 a.m., Classroom B. The cost is \$36 for members and \$51 for nonmembers and as of this writing 5 spaces remain in the class. Please bring a 10X hand lens and the 5th Edition of *Rocky Mountain Flora*.

Bring a small glass jar with a lid for a sample of some *Edible Seeds Used in Cooking*. This will be taught in the preparation room off the Hall from 10 to 12 noon April 17. Bring your apron. The cost is \$7.50 for members, \$15 for nonmembers. Limit 15.

The first *Field Trip* to see the seasonal wild flowers will meet on April 21 at 9 a.m. in the parking lot of the House, 909 York. No charge but please share gasoline expenses with your driver. Bring lunch.

All sorts of information on the care of *Dahlias* will be imparted on April 23 from 9 to 11 a.m. in Classroom B. You will divide tubers under the supervision of your instructor and some will be yours to take home. The cost is \$3. Limit 15.

The *Perennial* class for members is full. If you have friends who are not members of the Gardens, they may enroll for the afternoon class, April 26 taught by Mr. Pierce at 1 p.m. The nonmembers will pay \$7.50. The class is limited to 25 students.

Grow Your Own

Some students have requested a dried flower class. Why not grow your own everlastings by selecting and planting some of the following examples:

Why not grow your own everlastings by selecting and planting some of the following examples:

Acroclinium or *Helipterum roseum* "Sunrays," 1 to 2 ft., large white, pink and rose yellow-centered flowers. "Rhodanthe" is also a helipterum.

Ammobium alatum "Winged Everlasting." 2 to 3 ft., large white doubled daisy flowers. Winged stems.

Celosia cristata and *plumosa* "Cockscomb" and "Celosia." The cockscomb or crested celosia is preferred over the feathery plumed celosia because of its greater durability when dried. Celosia varieties range in height from 1 to 3 ft.; the taller varieties are better for stem length. Colors include deep red, scarlet, gold and rose shades.

Gomphrena globosa "Globe Amaranth." 1½ to 2", thumbnail size, clover-like blossoms in white and vivid lavender, cerise, rose, purple, and red and gold shades.

Gomphocarpus fruticosus (no common name), 3 ft. Grown for its downy thimble-sized fruits, bronze and yellow-green in color.

Helianthus annuum "Sunflower." The single flowered varieties, 'Red and Gold' and 'Red', develop large, bushy plants. Blossoms are smaller and more numerous than of the mammoth sunflower. Harvest blossoms before they are fully open. The double flowered types don't dry well.

Helichrysum bracteatum (monstrosum) "Strawflower." Varieties range from 1½ to 3 ft. in height. The generally available strawflowers have a wide range of colors, from white to yellow, gold, rose, and wine shades. For best keeping quality, harvest at bud or half open stage and replace the fragile stems with fine flexible florist's wire.

Limonium species "Statice." Three species of limonium, growing from 1 to 3 ft. high produce clusters or spires of tiny parchment-like flowers on wiry stems. White, yellow, blue, pink and rose colors.

Nigella damascena "Love in a Mist" or "Devil in a Bush." 1 to 1½ ft. White pink and blue colors in lacy baskets of thread-like leaves. The decorative seed pods will dry by hanging but flowers must be dried in sand or silica gel

Xeranthemum annuum "Common Everlasting" or "Immortelle." Plants 2 to 3 ft. high with 1½-inch diameter daisy-like blossoms on long stems. White, violet-blue, pink and purple blossoms.

Annual everlastings are planted outdoors in late spring and harvested in late summer. In short season areas, seeds should be started indoors and seedlings transplanted after frost danger is past. (Information Service of North American Garden Seed Industry.)

Thank You!

We welcome the following as participants in our Four Seasons Corporate Affiliates Program:

American Television & Communications Corp.
Applewood Seed Company
Arthur Andersen & Co.
Central Electric Supply Co.
Chevron U.S.A., Inc.
Davis Partnership
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Drive Train Industries, Inc.
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First Interstate Bank
Fluor Oil and Gas Corporation
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Fuller and Company
Gary Energy Corporation
Hamilton Brothers Oil Co.
Harrison Western Corp.
Glenn K. Hill
Ideal Basic Industries
International Engineering Company, Inc.
King Soopers
Marsh & McLennan, Inc.
Public Service Company of Colorado
Ralston Purina Company
Rocky Mountain Bank Note
Rocky Mountain/Orthodontics
Ryall Electric Supply Co.
Touche Ross & Co.
Tracom Corporation
United Bank of Denver
University National Bank
Warren & Sommer, Inc.

If you desire additional information on this program, please contact the Development Office of the Denver Botanic Gardens at 355-3456. Participants in the Four Seasons Corporate Affiliates are helping with this on-going program as we continue today's momentum for tomorrow and generations to come.

Thanks to the Zoo

Special thanks to the Zoo for the loan of the Bali Mynahs. Goodby, Aylar and Bianca, we think you enjoyed your holiday at the Gardens and we know the Gardens enjoyed having you.

Welcome, New Members

Mr. & Mrs. David Allen	Sophie Haevska
Scott M. Allman	Mr. & Mrs. Charles Hall
Devra L. Altman	John L. Hames
Ms. Carol Andersen	Ms. Terry G. Harris
Melody Baker	Glenn K. Hill
Virginia T. Barber	Peter M. Hoagland
Gayle M. Barrett	Larry Horgan
James F. Bascom	Mr. & Mrs. D. L. Howell
William P. Battle & Family,	Mr. & Mrs. Ken Hubbard
Dr. & Mrs. John W. Berg	Mrs. Dorothy E. Irvine
Liz Besant	Mr. & Mrs. Stephan Jalovec
Mr. & Mrs. David L. Billings, II	Mr. & Mrs. Ole T. Jensen
Richard Booth	Jane L. Johnson
Joseph A. Bottone	Martin L. Jones
John A. Breed	Mrs. Jacalyn Jostad
Mr. & Mrs. Elliot L. Brown	Hannah Joy
R.J. Bryan	Mr. & Mrs. Jerry L. Kern
Lewis F. Buckingham	Mrs. Mary Ann Kerr
Mr. & Mrs. Larry D. Burden	Dr. & Mrs. Eugene L. Klenk
Mr. & Mrs. Robert J. Burke	David & Linda L. Kramer
Peter M. Caplan	Norman F. Kron, Jr.
Mrs. Irene Cazer	Darwin R. Kuhlmann
Mr. & Mrs. James Childs	Edward & Penny G. Lager
Debbie Clark	Jane E. Lappin
Dr. Robert Bruce Cowan, Jr.	Linda Larson
Kathleen Crowley	Dr. Robert M. Lehman
Mr. & Mrs. Emmett A. Cruson	Jonathan H. Lewis
Mr. & Mrs. John M. Dickson	C. S. & Norma Linderholm
Dermod Downs	Barbara J. Loops
Mr. & Mrs. Michael J. Duffy	Gary Luhnow
Mrs. Nancy J. Dumke	Mrs. Edward F. Lupe
Mrs. Bertha V. Dunham	Mickey McInnis
Mrs. Florence Dunn	Cheryl McNabb
Mrs. C.H. Durning	Aruna Malhotra
Mr. & Mrs. Ronald Ely	Mrs. Virginia Marcoe
Mrs. K.C. Ensor	Mr. & Mrs. Robert L. Martin
Kenneth D. & Phyllis Eveleigh	Mrs. Mary M. Maxwell
Marian Farrell	Douglas & Robin Melius
Fashion Bar	Philip & Virginia Michaelson
Mr. & Mrs. Roy J. Fassel	Mrs. Elizabeth G. Mickey
James A. Fetlegge	Mrs. James R. Morgan
Chris Fish	Mrs. Joe L. Morris, Jr.
Scott & Donna Fisher	Cynthia K. Mueller
Fluor Oil & Gas Corporation	Darlene M. Mukavetz
Cathleen S. Fowler	Mrs. Edith C. Niblo
Shirley Franklin	Linda Nichols
Martin Freeland	Ms. Robin Niederloh
Fuller & Company	M. Bernice Nielsen
Cynthia S. Futa	Mr. & Mrs. Ronald W. Nordquist
Richard W. & Ann George	Dianne E. Norell
Mrs. Connie R. Golinski	Mrs. Joan J. Northrop

Mary M. Oakes
Mr. & Mrs. James L. Palenchar
Dr. Siegwalt O. Palleske
Ms. Ruth S. Palmer
James R. Patterson, Sr.
Deborah E. Pero
Theresa M. Pott
Mrs. Glen A. Pray
Lynn Robbins
Rocky Mountain/Orthodontics
Mrs. Eloise H. Robinson
Mr. & Mrs. Philip J. Ritter
Stan Ritter
James A. & Carol C. Russell
Mr. & Mrs. J. William Sallada
George & Joan Schmidt
Leona M. Schroeder
Mr. & Mrs. A.W. Scott
Ms. Leigh Seacord
Nancy Shelley
Leonard B. Shulman
Vivienne Sigman
James Slagle
Mr. & Mrs. Harry D. Smith, Jr.
Kevin P. Smith
Scott & Bonnie Sprague
Wendy W. Stokes
Mary Lu Strachan
Tom & JoAnne Stratton
Theron Taylor
Earle Templeton
Pamela Throop
Thai Q. Tran
Mrs. Frank M. Turner
Mrs. Gabriella Tyrone
Linda Verretta
Mrs. Clair E. Villano
Mrs. Barbara A. Vollmer
Julius Wagner
Karen A. Wagner
Nancy Wagner
Stan C. Wawrzyniak
Mr. & Mrs. Jack B. Weil
Mr. & Mrs. Carroll H. Weiss
Jessie T. Wellman
James & Donna Wiggins
Mrs. Alverta G. Wilson
Diane Mary Wilson
Thomas J. Woneis
Mrs. M. L. Wooldridge
Mr. & Mrs. Robert K. Yant
Mrs. Mary Frances Young
Mrs. Christine Zupa

IN MEMORIUM

John J. Sheehan 1934-1982

John Sheehan only worked at Denver Botanic Gardens one year. He was a quiet, unassuming man working principally in the greenhouses, out of notice of our visitors. However, in that one brief year at the Gardens he touched my life and the lives of many of us on the staff by his interest in plants, his thirst for

knowledge, his eagerness to promote the Gardens, and his warm and sincere interest in each individual he came into contact with as he carried out his daily responsibilities as a gardener. To allow his passing without recognizing the very real contribution he made to the Denver Botanic Gardens would not be fair to John nor to those of us who cared about him. We will miss his caring, his sharing, his bold creativity, his genuine love of plants and the many other traits that made John J. Sheehan the individual personality he was. As for me — I will miss John as my friend.

Merle M. Moore

THE JOLLY GREEN GARDENER

April 1982, Vol. 12, No. 2

(For Junior Readers)



DENVER BOTANIC GARDENS

Lost Forever!

Many people are tempted to pick the wildflowers that grow along roadsides, mountain meadows and parks. This is sad because hundreds of beautiful flowers are in danger of becoming **extinct**.

Extinct plants are lost forever from the places where they used to grow. You could search everywhere for a certain extinct plant and not find even one.

Endangered plants are those that are in danger of becoming extinct. A plant may be endangered in several ways. It may be picked or dug up too much, or it could be injured by insects or disease. Another cause of plants becoming endangered is destruction of **habitat**. Habitat is the place where a plant grows such as a field, brookside or forest. For example, alpine plants are often destroyed by snowmobiles plowing paths through the mountain sides.

Everyone knows we need plants for food, like lettuce, carrots and wheat. We use trees for lumber, paper and fuel, and we need plants for fibers, such as cotton, to make cloth. We also need certain plants for medicine. So why do we need endangered plants? Because, we just never know when we may have to replace one of our useful plants due to disease or possible changes in climate, or when we may find another wild plant, perhaps a rare, endangered one, which may become useful in our lives. It is important to protect plants just to enjoy their beauty!

Most state and local parks do not allow you to pick or dig up plants. You are asked instead to look, admire and photograph. You may pick a bouquet of wildflowers from your own yard. Perhaps you have a friend who owns a field or ranch and can get permission to pick there. But remember—it is still important to pick only very common flowers.

The best way to enjoy all plants is to look at them in the wild where they grow naturally. Appreciate beautiful native plants in their own habitat. That is the place where they grow best and live longest. Please do not pick wildflowers, or transplant them into pots or your garden. Instead, sketch or photograph them and display their pictures in your home. Tell your friends about endangered plants—you will be helping to save beautiful plants from being lost forever!

Some plants you should not pick:

- Wood Lilies
- Yellow Ladyslippers
- Calypso Orchids
- Alpine Columbine

Some plants you may pick:

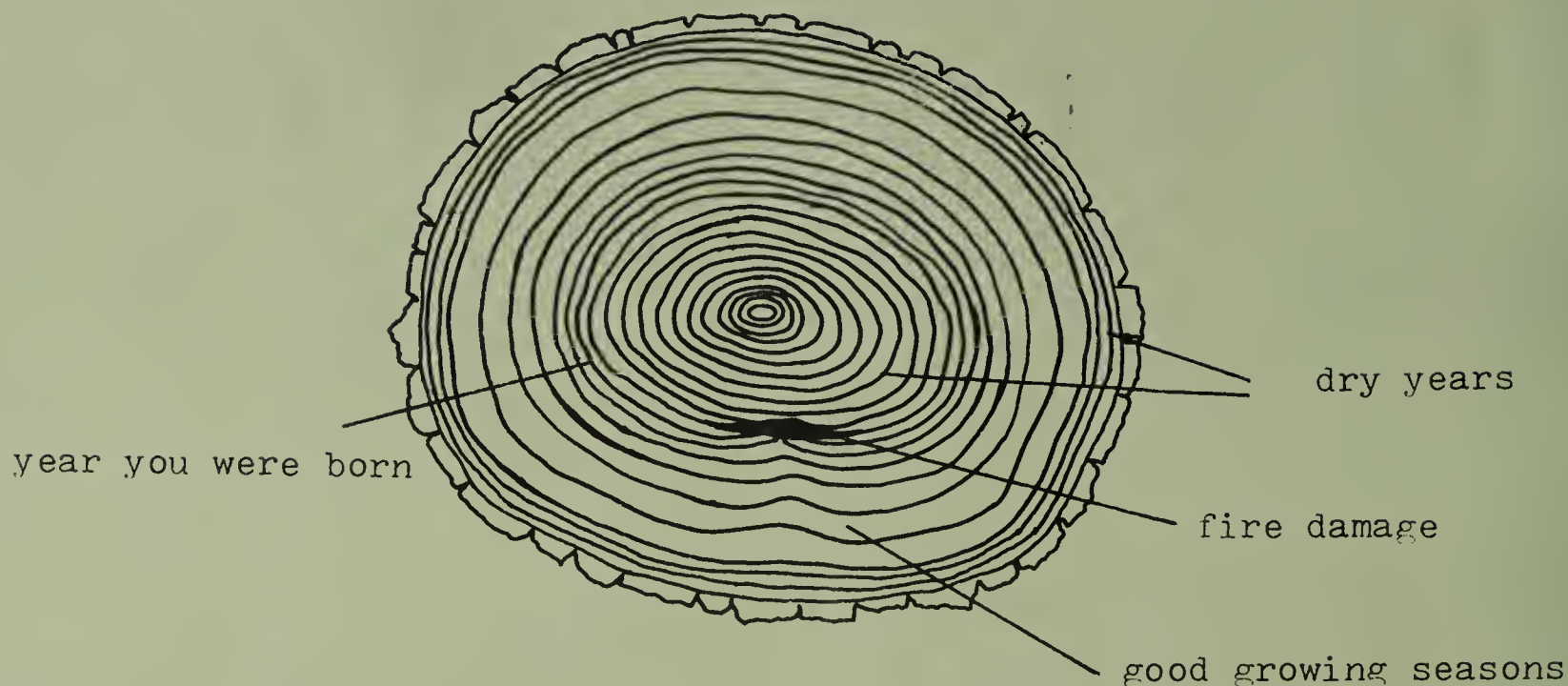
- Dandelions
- Mint
- Clover
- Bindweed
- Foxtail grasses

A more complete list of endangered plants of the Rocky Mountain region can be found in the Denver Botanic Gardens' library.

Hug A Tree



What Can You Learn From A Tree Stump?



Usually the first thing you notice about a tree stump is its rings. The distance between any two rings tells you how much the tree grew during a particular year. Each spring and summer a tree adds new layers of wood to its trunk. The wood formed in spring is light in color. In summer growth is slower and the wood is darker. You can easily tell a tree's age by counting the dark rings. If you know when the tree died or was cut down, you can count back and find the ring that grew the year you were born.

Many things effect the way a tree grows and can change the shape, color and thickness of the rings. The growth rings of old trees can tell us much about weather and growing conditions long ago.

When the weather has been dry, or insects and disease hurt a tree, the rings are thin. When there is plenty of rainfall and adequate light the rings are thicker. A tree can record events that have made it different from other trees. For example, if a forest fire damages one side of a tree, the rings would show years of growth healing the wound and eventually growing over it.

You may find stumps with more than two hundred rings! Sometimes a live tree with a trunk of the same size is growing nearby and you might picture it there before there were ever any houses or roads, cars or television. It's fun to imagine what a very old tree would describe to us if it could talk!

for pre-schoolers

Make Your Own Easter Egg Dye!

Ask your grocer for a sack full of discarded onion skins. Place these in a large enamel or stainless steel pot and add water to almost half the depth of the onion skins. Simmer about 1-2 hours or until skins are almost clear. Stir occasionally. Cool and remove the cooked skins. The liquid has now become the dye. The color will range from a light golden yellow to a bright burnt orange, depending on the length of time that the eggs sit in the dye.



Hair-raising Fun!

Carefully break away the smaller end of an egg shell. Rinse and dry the remaining shell and fill with potting soil. Next, using water-proof felt tip markers, draw on a happy face. Cover the top of the soil lightly with grass seed. Annual rye grass seed works well. Water carefully. Your egg can set in a single cup cut out from an egg carton. Put your egg where it will get some light and keep the soil moist. In a week or so your little "egg-head" will be sprouting bright green hair and will need a hair-cut now and then!

Questions to Make You Think

- Do plants go to sleep?
- Are most trees taller than you?
- Which stands more, you or a tree?
- Is a tree ever taller than a house?
- Which has the most eyes? a needle? a girl? a potato?
- Which takes longer to peel, an orange or a banana?
- Is a tree an animal?
- Does an apple feel pain when you cut it?
- Do flowers last longer on the plant or after they are cut from the plant?
- Would you rather walk barefoot among briars or on a grassy lawn?
- Which has more juice, a banana or an orange?
- Are all pumpkins orange?
- Does a rubber ball look the same after it is bounced?
- Does a tomato?



Calendar of Events



April 1982

2)*	12:00 noon	D.B.G. House—Main Room	Civic Garden Club—Annual Tea
3)	1:00-4:30	Education Building—Mitchell Hall	Rocky Mt. Council AFRICAN VIOLET SHOW
4)	10:00-4:30	Education Building—Mitchell Hall	Rocky Mt. Council AFRICAN VIOLET SHOW
5)*	9:30 a.m.	Education Building—Classroom C	“Anatomy of a Compost Heap”—John Bret
6)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept.
6)*	1:30 p.m.	Education Building—Classroom C	Central Colorado Library System
6)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
7)*	10:00 a.m.	Education Building—Classroom A	“The Outdoor Gardens at 1005 York Street
7)*	10:00 a.m.	D.B.G. House—Main Room	Plant Sale Committee Meeting
8)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
8)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
9)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
10)	9:00-4:45	Education Building—Mitchell Hall	Colorado Cactus & Succulent Society Show
10)	9:00-4:45	Education Building—Mitchell Hall	Denver Dahlia Society Tuber Sale
10)	9:00 a.m.	Education Building—Classroom B	“Spring Flowering Plants of the Denver
			Area”—Dr. William Gambill
		(This class continues each Saturday at 9:00 a.m. through May 22 except May	
11)	9:00-4:45	Education Building—Mitchell Hall	Colorado Cactus & Succulent Society SHOW
11)	9:00-4:45	Education Building—Mitchell Hall	Denver Dahlia Society Tuber Sale
12)*	12:00 noon	D.B.G. House—Main Room	Dig & Dream Garden Club
12)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
12)*	7:30 p.m.	Education Building—Classroom B	The Nature Conservancy
13)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
14)*	9:30 a.m.	D.B.G. House—Main Room	D.B.G. Guild
14)*	10:00 a.m.	Education Building—Classroom A	“Outdoor Gardens at 1005 York Street”
15)	6:30 p.m.	Education Building—Mitchell Hall	American Iris Society Spring Meeting
15)	7:30 p.m.	Education Building—Classroom B	Indoor Light Gardening Society
16)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
16)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
16)*	8:00 p.m.	Education Building—Mitchell Hall	Denver New City Opera Co.
17)	9:00-1:00	Education Building—Classroom C	Symposium on Cacti and Succulents-Colorado Cactus & Suc-
			culent Society
17)*	10:00 a.m.	Education Building—Preparation Rm.	“Edible Seeds for Spring Cooking”—Judith Fine-Sarchielli
17)*	10:00 a.m.	Education Building—Classroom A	Colorado Mycological Society—Mushroom Identification
			Class
19)*	10:00 a.m.	D.B.G. House—Main Room	The Associates—Board Meeting
19)*	12:30 p.m.	Education Building—Mitchell Hall	Smith College Club of Colorado Forum
19)	7:00 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society
20)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept.
20)*	5:00-7:00	Education Building—Mitchell Hall	Dept. of Social Services
20)*	5:30 p.m.	Education Building—Classroom A	Women in Mining
20)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
21)	9:00 a.m.	D.B.G. House—Parking Lot	Plant Life Field Trip
21)	7:30 p.m.	Education Building—Classroom C	American Rock Garden Society
22)	9:30 a.m.	Education Building—Classroom B	African Violet Society of Denver
22)*	10:00 a.m.	D.B.G. House—Main Room	Around the Seasons
22)*	7:30 p.m.	D.B.G. House—Main Room	Men’s Garden Club of Denver
23)*	9:00 a.m.	Education Building—Mitchell Hall	Ikebana International
23)*	9:00-11:00	Education Building—Classroom B	“Dahlia Culture”—Susan Praetz
23)*	5:00 p.m.	Education Building—Mitchell Hall	Colorado State Library Services for the Blind and Physically
			Handicapped
24)*	10:00 a.m.	Education Building—Classroom A	Colorado Mycological Society
24)*	8:00 p.m.	Education Building—Mitchell Hall	Denver New City Opera Co.
26)*	9:30 a.m.	Education Building—Classroom C	“Perennial Gardening”—Andrew Pierce (members only)
26)	9:30 a.m.	D.B.G. House—Main Room	Ultra Violet Club
26)*	1:00 p.m.	Education Building—Classroom C	“Perennial Gardening”—Andrew Pierce (non members only)
28)*	12:00 noon	D.B.G. House—Dining Room	Colorado Garden Show, Inc.

Calendar of Events (cont.)

MAY 1982

- 1)* Education Building—Mitchell Hall
- 4)* 9:30 a.m. Education Building—Classroom B
- 4) 7:30 p.m. Education Building—Classroom B
- 7) 11:00 a.m. D.B.G. House—Main Room
- 7) 9:30-5:30 Education Building—Mitchell Hall
and Outside Grounds
- 8) 9:30-5:30 Education Building—Mitchell Hall
and Outside Grounds

*Members or Enrollees only

Colorado Cultural Institute
Parks & Recreation Dept.
Denver Bonsai Club
Civic Garden Club
ANNUAL PLANT SALE

ANNUAL PLANT SALE

Botany Club Friday, April 16 7:30 p.m. Herbarium

This month Dr. Gambill will talk about common plant families, flowers of which we will see this spring.

Saga School Master to Visit

Ikebana International, Denver Chapter, will present a demonstration by a Flower Master of Saga School, from Japan, on Friday morning, 10 a.m. April 23, in John C. Mitchell Hall. Miss Hiroko Sagi, of the Saga School, will demonstrate their particular style of flower-arranging. Tickets, for \$2, are available from I.I. members and at the door of the Hall.

Cactus and Succulent Show

The Annual Cactus and Succulent Show and Sale will be held in The Hall on Saturday and Sunday, April 10 and 11.

This event is sponsored by the Colorado Cactus and Succulent Society each year. Displays of exotic and rare forms of succulent plants of many plant families will be displayed. Included will be



Green Thumb Newsletter is published monthly by the Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editors is 2:00 p.m. on the 10th of each month preceding publication. Editor—Margaret Wallace, 575-2548.



Denver Botanic Gardens, Inc.
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Denver, Colorado 80206
303-575-2548

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April 1982

Address correction requested



Plant Giveaway

Our Annual Plant Giveaway will be on Friday, May 21, from 8 a.m. to 3 p.m. and on Saturday, May 22, from 9 a.m. to 1 p.m. Present coupon below either day and receive one plant per membership (family, individual, etc.). Please use the Gaylord Street entrance and pick up your plant at the west end of the greenhouses.

Among this year's outdoor selections are Engelmann spruce, horse chestnut, and sycamore maple. House plant enthusiasts may choose from variegated weeping fig, ginger, hibiscus, or Cyperus, among others.

Quantities of some genera are limited so come early for the best selection. If possible, bring us your spare pots for replacement.

THIS COUPON GOOD FOR ONE FREE PLANT AT DBG
PLANT GIVEAWAY MAY 21 or MAY 22, 1982. Be sure to bring
your membership card, too.

Symphony Concert to Benefit DBG

The Denver Symphony Orchestra will perform at a special benefit concert for the Denver Botanic Gardens on Wednesday evening, June 9, 1982. The Symphony will play in the outdoor amphitheatre at the Botanic Gardens, and a picnic supper will be served as part of the admission charge.

Bring a blanket to sit on and come join us for this very special DBG fund raiser. A reservation form for the picnic/concert is inserted in this issue of the newsletter. In case of rain the supper and concert will be held inside.

This benefit concert is made possible by a generous gift from an anonymous donor; do plan to join us so that this gift of music can help our garden grow. Additional reservation forms are available at the DBG entrance or from the administrative offices.

The program is tentatively expected to include pieces by Handel, Beethoven, and Grieg. The Gardens will open at 5:30 p.m. for the benefit. The picnic supper will be served at 6:00, and the concert will begin at 7:00. There will be a cash bar.

Reservations for the fund raiser must be received by the DBG no later than Monday, June 7; the cost is \$35 per person.

Trips Scheduled

The Colorado Native Plant Society has invited anyone who is interested to join a 2-day field trip to study the vegetation of the red sandstone canyons of the Dolores River near Naturita. This is scheduled on May 29 and 30. There is no fee and registration is unlimited but you must register by May 15. To do so call Jim Ratzloff (234-3580) or Scott Ellis in Ft. Collins (493-8878, or 493-6069).

Another trip with the same deadline for registration will journey to the Piceance Basin on June 25-27. For further information or to register call Scott Ellis as listed above or Ann Hilstead of the Nature Conservancy (837-0505).

MAY 21—7:30 - HERBARIUM—BOTANY CLUB MEETING.
BRING PLANTS TO IDENTIFY.

Weekend in Crested Butte!

An opportunity to see the beauty of summer in the high country, to learn more about the work of the Rocky Mountain Biological Laboratory, and to enjoy the congenial company of other flower lovers will be provided on July 23-25, 1982. You will be transported by van from Denver, through Fairplay and South Park, over Monarch Pass, to our destination, the old mining town of Crested Butte. You will stay at St. Patricks, a renovated church, with sleeping accommodations ranging from separate bedrooms to a spacious dormitory loft. After dinner there will be a brief orientation to Gunnison County and time to stroll around the community. The next morning you will be driven eight miles to Gothic for a full day at the Rocky Mountain Biological Laboratory, touring their facilities. Saturday evening will be free so you may eat at one of the fine restaurants in town and participate, if you wish, in activities offered in Crested Butte. The next day you will start for Denver by way of Marshall Pass, an old Denver & Rio Grande Railroad pass.

All transportation, lodging, and meals (with the exception of Saturday night's dinner) will be provided at the cost of \$215 (including \$15 donation to the Denver Botanic Gardens). An initial deposit of \$50 is required by June 7. Of this amount \$20 will be non-refundable. The remainder, \$165, is due by June 21 with no refunds after that date unless a substitute can be found for your place. The tour is limited to ten people. If you desire further information, call Margaret Wallace, 575-2548.

To make your reservation, please return this slip to Denver Botanic Gardens, 909 York Street, Denver, CO 80206 before June 7.

Yes, count me in on the trip to Crested Butte on July 23-25, 1982. Enclosed is my registration deposit (\$50) or full payment of \$215. \$_____.

Name _____
last first

Address _____
street city zip

Telephone _____
home business

Make checks payable to Denver Botanic Gardens.

A Festival in June!

A festival to raise money for the Japanese Garden is being planned for Sunday, June 20, 1982. The event will be patterned after the traditional Kodomo No Hi Matsuri held annually in the spring throughout Japan; it is their very popular spring festival or children's festival. The details are being planned by the Denver Bonsai Club under the chairship of Don Nakamura (321-2506) and the festival will coincide with the second day of the Denver Bonsai Club's annual bonsai show.

The program promises interest, entertainment, and fun for all.

Plant Sale, May 7 & 8, In and Around 1005 York St., 9:30 to 5:30 Both Days

Because of the dedication of the Rock Alpine Garden in June, 1981 and an ever greater interest in native plant materials requiring minimal moisture and adaptability to the area's rigorous climatic conditions, well over 100 varieties will be offered at the *Rock Garden-Ground Cover Booth*. An alternative to a water-consuming lawn is a ground cover of pussytoes (*Antennaria*). Equally effective planted between flagstones, its tiny white or pink flowers remind one of little cat's paws. The silver green leaves last all winter. Sulphur flowers, yellow and reddish *Eriogonum*, may also serve as evergreen mats. Low penstemons (i.e. *P. caespitosus*) with light blue or purplish flowers clump nicely and spread. The 6-inch high firecracker (*P. pinifolius*) will form mats up to 30" across and will turn an interesting bronzy hue in the winter. The wild alpine strawberry delights the ground cover enthusiast as well as the palate of the fruit lover. Even the holly grape (*Mahonia repens*), able to withstand severe pruning, will spread luxuriously in sun or shade. Clusters of yellow flowers and blue berries will be pleasing spring and fall. Little water is required in summer. A deep red winter leaf keeps this native attractive all year long. Ivy, myrtle, and pennywort also spread nicely and are available.

Effective tucked into rock crevices are unusual hens and chicks, candytuft, sedums, and creeping phlox. A special addition to the booth this year is the lovely paper flower (*Zinnia grandiflora*). Surviving in a dry, clay soil, this buttercup-like blossom dries beautifully for everlasting bouquets. Modest moisture needs are characteristic of the silver-fringed *Artemisia frigida* which gives off a pungent sage fragrance when picked. The sweetly scented alpine poppy (*Papaver nudicaule radicum*) has a unique yellow hue.

Patios are perfect for pots of scented geraniums which are purchasable at the *Herb Booth*. Vibrant blossoms, ranging in color from white to pink, red, mauve, and deep purple, exude individual fragrances. Leaf textures are also varied. Excellent for drying in potpourri, their charms continue after first bloom. All the following scented geraniums will be available. 'Blandfordianum' produces dainty white flowers. The variegated 'Prince Rupert' crispum cascades beautifully from hanging baskets, enhancing a condominium balcony as do the 'All Spice,' 'Village Inn,' apple, and nutmeg varieties. Collectors of the rare watch for the Rober's lemon rose! An upright scented geranium, it delights the eye as well, for no two leaves are the same. Another rare individual is Attar of Rose. It has a musky aroma and pale pink flowers and is new to the Denver area this year.

"Gooseberries as big as your thumb!" Only at the Botanic Gardens Plant Sale exist such possibilities! Four dessert varieties: 'Catherina,' 'Early Sulphur,' 'Leppa Red,' and 'Poreman' will tempt as well as two others for pie making. No need to blow your food budget on berry delicacies. Grow your own raspberries, boysenberries, and even blueberries, as well as currants and grapes. *The Berry Basket Booth* carries these plus more dwarf fruit trees, nice for patio decor. This year's special attraction is the dwarf peach.

Making jams, jellies, and preserves can naturally follow fruit harvests. For a change, try preserving the very tasty 'Yellow Plum' tomato in a marmalade. Excellent! More and more tomatoes, peppers, cucumbers, melons, pumpkins, and leeks are chosen for their high quality, productivity, early maturation, and suitability for limited gardening spaces. Cauliflower, cabbage, and broccoli will yield before frost. Rush for the 'Gold Rush,' a prize zucchini! All are available at the *Vegetable Booth*.

Are you impatient to put out your flowers NOW and yet wary of a late spring snowstorm? Try a hanging basket from the *Patio Booth*. It may grace an apartment terrace, a condo lanai, or even a

tree branch in your yard. Two dazzling variegated geraniums, 'Roulette' and 'Velma Cox,' are real finds this year. Fuchias and impatiens are always popular and can be safely brought in if the weather changes!

A houseplant can be taken outside on the patio mid-summer. Hibiscus, bougainvillea, oleander, and gardenias may be found this year in the *Houseplant Booth* in the John C. Mitchell Hall. Exotics, too! And you don't need a greenhouse to grow orchids. Some of the showiest are the easiest to cultivate. Look for the lovely moth orchid (*Phalaenopsis*) and lady slipper (*Paphiopedilum*).

Happi coats and bonsai demonstrations will catch your eye and intrigue your mind as you observe expert technicians at the *Bonsai Booth*. Colorado blue spruce, juniper, lodgepole and ponderosa pine are highly recommended materials. Azaleas, the tree lime and orange, as well as Japanese maple, ginkgo, quince, and cherry are subject to miniaturization. Buy or bring your own pot and material and learn a fascinating ancient art.

Delphinium, day lilies, Oriental poppies, chrysanthemums, peonies, clematis, and shasta daisies are a few of the favorites at the *Perennial Booth*. Those which are admired because they adapt to the high and dry climate are statice, lunaria, red hot poker, coralbells, coreopsis, hardy aster and evening primrose. Remember "Dr. Hildreth's Cheyenne mums"?—very hardy! Yarrow, *Sedum spectabile*, and baby's breath are attractive in dried arrangements. Five ornamental grasses and two new yuccas are obtainable this year. Lovely geums with petals ranging in color from yellow to orange and red are interesting additions to a perennial garden. In spite of all the snow this year in the high country, we may be forced to be "moisture misers." Trained volunteers and well advise you how to achieve a garden colorful from May to October with minimum watering.

Truly there is nothing lovelier than a tree! Drought-resistant varieties of evergreens are desired, and we have the eastern slope native, *Jamesia americana*, an unusual offering in the *Trees and Shrubs Booth*. A southwestern Rocky Mountain specimen is the cowania, a small shrub, good in containers on a patio. An "almost evergreen," the fern bush (*Chamaebatiaria*), native to Arizona and New Mexico, is a member of the rose family. Pyramidal and tidy, it has lovely white blossoms. The native serviceberry (*Amelanchier alnifolia*) has dainty white flowers and a purple berry, attractive to birds and delicious in jellies. Curl-leaf Mountain Mahogany (*Cercocarpus ledifolius*) is an evergreen which can be espaliered. A small native scrub oak (*Quercus gambelii*) will do well in sandy soil and display fall color. Needle-like foliage and yellow blooms characterize the western rabbitbrush (*Chrysothamnus*) which is effective in rock garden landscaping.

Looking for a rare edition beautifully bound and illustrated? Or are you seeking an out-of-print special horticulture treatise? DBG inherited a remarkable collection of fine editions. We offer them for sale in two rooms in the library basement. There are more magazines, hard backs, and paperbacks on gardening subjects than have ever been featured before. In addition, you'll find other subjects such as natural history, health, cooking, travel, mystery, and an excellent representation of children's literature. All donations are accepted until May 7th, and all proceeds go to the DBG library. Be sure to visit this *Used Book Sale*.

Come and see what we have to offer. We need your support! We also need your help at the Sale itself (call Mrs. Theodore Wrenn, 733-5749 to volunteer) and as usual, we need ADDING MACHINES. If you have any to donate, please call Newell Grant, 777-0428 or bring to 1005 York. Thank you!

Reminder—The Gardens will be closed Thursday, May 6th.



FRESHWATER MARSHES. Milton W. Weller.
University of Minnesota Press. Minneapolis. 1981.
QH 542.5 M3 W4555

Milton Weller's experience with freshwater wetlands stems primarily from his studies of emergent wetlands of the Midwest. Although the book takes its examples from the glaciated "pothole" marshes of Iowa, Minnesota, and lower Canada, the processes described are relevant to the dynamics of emergent wetlands across the middle latitudes of North America. **Freshwater Marshes** is definitely a book for those who are looking for an introduction to the ecology of the wetland system. The text emphasizes description on the general dynamics of the marsh community and its dependence on specific hydrologic conditions. An interesting section of the book reviews management problems associated with these special lands. A presentation of wetland management alternatives brings together scientific information from the early chapters of the book to give the reader a good perspective on the problems of marsh managers. Appendix A is for the reader who is interested in getting his feet wet in amateur wetland study. This section describes a variety of simple investigations anyone can use to gain an insight into the happenings of the marsh landscape.

Steve Boand

THE DESERT SMELLS LIKE RAIN. Gary Paul Nabham.
North Point Press. San Francisco. 1982.
QH 541.5 D4 N345.

This book is a delightful account of the way the Papago Indians of southwestern Arizona and Sonora live today. These people derive their name from two Pima words that denote "bean people"—and that they are. They developed the tepary beans that grow so well for them in the desert. Although modern life styles have changed their ways since the beginning of the century, their legends abound and the "old ways" are still revered. Nabham, an ethnobiologist and plant ecologist, has written more for the ethnologist than for the botanist, although several chapters are devoted to the native plant food sources for these desert dwelling people. I was particularly interested in the Papago methods of floodwater farming and the vast change that occurs with it. The method is one guaranteed to make the desert bloom. In 1930, they cultivated 10,000 acres of desert with this kind of agriculture—sustaining the tribe well. Anglo depletion of ground water and dam use have reduced the Papago flood water irrigation acreage to a mere 100 acres in 1980. However, I suspect that the Indians will have the last word. Tucson and many other southwestern cities are burgeoning. Consequently, they are using up the groundwater faster than it can be replenished. The year 2000 may well see the end of southwestern Arizona's expansion as a retirement area. By that time an insufficient supply of water will not meet the daily needs of the present population, no less an increased one. Hence the region may well need to revert to desert and Papago agricultural methods. The natural history I expected to read based on the subtitle "A Naturalist in Papago Indian Country" is included but tucked into odd corners. It is noted only as

it affects the Papagos. As project manager of the Southwest Traditional Crop Conservancy Garden and Seed Bank, I hope to keep a good collection of viable seed for the time that it will be needed as old fashioned desert agriculture is revived.

F. Martin Brown

PALEOBOTANY. An Introduction to Fossil Plant Biology. Thomas N. Taylor.
McGraw Hill Book Company. New York. 1981.
QE 904 A1 T39.

This textbook covers extensively the paleohistory of all major fungal, protist and plant groups. Packed with an abundance of examples, the text explores the paleobotanical evidence upon which modern plant morphology is based. While well suited for a reader with a thorough background in plant morphology, the text is perhaps overwhelming for a casual reader hoping to gain insight into the paleobotanical history of Colorado. Taylor's text is a welcome addition to paleobotany. It provides an up-to-date treatment of general paleobotany, incorporating recent evidence and new techniques in the study of fossil plants. Unlike other ancient textbooks on the subject, Taylor views fossil organisms not as static imprints or coalified relics of the past but rather as once living dynamic organisms. The book is suitably organized to allow for easy reference to a particular subject; yet, the serious nonbotanist can read through the entire text and gather a good understanding of the paleohistory of major fungal and plant groups. For some, the glossary and bibliography alone may be worth the price. While general paleobotany is well integrated, the book lacks in a discussion of paleobotany of specific regions. However, for the serious student of paleobotany, the book is unexcelled. For those wanting to know about the rich fossil heritage of our state, other sources should be consulted.

Robert N. Bowman

**NATURE IN THE WEST:
A HANDBOOK OF HABITATS.**

Richard and Jacob Rabkin.
Holt, Rinehart and Winston. New York. 1981.
QH 104.5 W4R

Richard and Jacob Rabkin have written a simplified description of ecosystems in the West for the nonprofessional naturalist. The general introduction explains the rationale for their book, use of habitats, and a description of each of the 25 habitats. Major plants and animals in each habitat, their interactions and dependencies, and the important geologic features of the habitat are described. Each section includes a rough but diagnostic color sketch of some typical plants and animals in that habitat. Although the book's binding does not seem durable, the authors intend it to be used as a field guide. The shape and size of the book allow it to slip easily into a back pocket or pack. The Rabkins feel they have eliminated the need for amateur naturalists to bring many volumes into the field. I do agree that the amateur using this book could identify the major

common plants and animals seen on a field trip. Although simplifications have caused a few minor inaccuracies in the text, the Rabkins have provided a concise view of nature that will not discourage the novice. Most important, it will educate her or him on not only the names of what are seen but also on plant and animal interactions and provide an overview of natural ecosystems.

Beth P. Lapin

FERNS. A Natural History. Edward Frankel.

The Stephen Greene Press. Brattleboro, Vermont. 1981.
QK 522 F7356.

Ferns. A Natural History is a volume beautiful both in its binding and layout. As stated on the dust jacket, "the book is profusely and beautifully illustrated with over 200 line drawings by Edgar Paulton." Although Paulton's illustrations are delightful and lucid, the text is wordy, trite and simplistic. More concrete fern information can be gleaned from a simple encyclopedia article than from this 264-page book. Frankel's anthropomorphic writing style creates a superficial and discursive narrative about ferns, providing little factual information for the person seriously interested in learning about these plants—"Early spring is a good time to start finding and fiddling with ferns. This is the season of the year when a young fern's fancy lightly turns to unrolling its bud." Many excellent books on ferns have been written by such fine botanists and horticulturists as John Mickel, Barbara Hoshizaki or Reginald Kaye. One wonders why a publisher would assume this kind of expense for a book of so little scientific value, however aesthetic it may be.

Panayoti Callas

EDIBLE MUSHROOMS. Clyde M. Christensen.

University of Minnesota Press. Minneapolis. 1981.
QK 617 C47 1981.

This book is a revision of the 1943 edition of **Common Edible Mushrooms** by the same author. Presented in a lively evocative style combined with interesting, often amusing anecdotes, this slim (110 pages) illustrated volume makes for interesting reading for the novice or advanced wild mushroom aficionado. It includes the nearly obligatory but highly variable "foolproof four" edible mushrooms, one of which in this case does not occur in Colorado. **Common Edible Mushrooms** should not be used as a guide in choosing edible wild mushrooms unless the species mentioned are checked in one or two good, recent and more scientific references. Even the general collecting advice to cut the mushroom off just above ground level could get the inexperienced person into serious trouble. A comparison with the 1943 edition reveals that nearly all revisions in the main text consists in updating scientific names only. It is unfortunate that much current applicable scientific information on toxins contained in some of the species mentioned has not been included. The cookery section, rather than being enlarged as stated on the dust jacket, is only half of the original edition, and there are some recipes worth trying.

Marilyn Shaw

GARDEN ART. Lorraine Marshall Burgess.

Walker and Company. New York. 1981.
SB 473.5 B886 1981.

This is a book laden with intriguing and noteworthy thoughts on art for the garden. Prepare yourself, however, for Lorraine Burgess

presents the reader with a monumental diversity of ideas. She suggests reading garden and art books and visiting museums, galleries, and gardens to spark your own individual creativity. The gardner, she urges, should strive to be self-expressive and unafraid to make a bold statement, reminding us that gardening and its refinements are "the doing and undoing of mistakes." In eight chapters, which include many photographs, Lorraine Burgess covers everything from art objects found in the attic to the Zen garden. Colorado gardening is specifically mentioned as the author lives in Colorado Springs. Primarily, the book seems written for the experienced gardener who can handle the fast pace and terminology. Beginners, however, are offered encouraging words of advice mixed with relentless coaxing. The spirit of this book is captivating and infectious and may be one you wish to include in your garden library.

Louise Campbell



THE REVIEWERS

Steve Boand—Environmental Scientist, Willard Owens Associates, Inc., Denver.

F. Martin Brown—Project Manager, Southwest Traditional Crop Conservancy Garden and Seed Bank, Colorado Springs.

Robert N. Bowman—Department of Botany and Plant Pathology, Colorado State University, Fort Collins.

Beth P. Lapin—Zoologist, Colorado Natural Heritage Inventory, Denver.

Panayoti Callas—Curator, Rock Alpine Garden, Denver Botanic Gardens.

Marilyn Shaw—Identification Consultant, Lecturer, Past Board Member of Colorado Mycological Society; Researcher-Artist for "Mushroom of the Month" column of Society's newsletter, **Spores Afield**.

Louise Campbell—Trustee, Denver Botanic Gardens; Member—Garden Club of Denver, Perennial Garden Club, and The Garden Club of America.

ANNUAL USED BOOK SALE—Friday and Saturday, May 7 and 8—9:30 a.m. - 5:30 p.m.

BAG SALE—Sunday, May 9—1 p.m. - 4 p.m.—\$2 per bag.

Horticultural books, children's books, biographies, fiction, Americana, magazines, and other book selections are available this year.

The library has openings for two volunteers. If interested, please call 575-2548, ext. 26.

A special benefit concert featuring the Denver Symphony Orchestra Wednesday evening, June 9, 1982. Bring a blanket and sit with us in the outdoor amphitheatre of the Denver Botanic Gardens for a picnic supper and symphony concert, to benefit the Denver Botanic Gardens.



Gardens open 5:30 p.m.
Picnic supper served 6:00 p.m.
Concert starts 7:00 p.m.
Cash bar
Picnic & concert inside in case of rain
Cost for the benefit is \$35.00 per person
Reservations must be received not later than Monday, June 7



Please make _____ reservations for me at \$35.00 each.
My check is enclosed in the amount of _____.

Please make checks payable to The Garden Party. Your check is your reservation unless a ticket is specifically requested. Please mail this form along with your check to:
The Garden Party, Denver Botanic Gardens, 909 York Street,
Denver, Colorado 80206.

Name _____

Address _____

Zip _____

I am unable to attend, but would like to make a donation
of _____.

Welcome New Members

Saundra L. Alexander
Mr. & Mrs. Peter J. Altmann
Mrs. Laurie P. Anderson
Nancy P. Anderson
Sharon Anhorn
Raymond D. & Donna Austin
Peggy Bain
Mr. & Mrs. Michael E. Barnhill
Katherine J. Barrigan
Mrs. Susan G. Bast
Cleve & Joyce Bell
Judith Jane Beach
Mr. & Mrs. Randall F. Bellows
Carol Berg
Mr. & Mrs. Thomas J. Bergstresser
Mr. & Mrs. Bernholtz
Mr. & Mrs. Robert C. Bigelow
Judith Birnbaum
Patricia L. Bissell
Mr. & Mrs. Clem Brigl
Mrs. Faye L. Brock
Mr. & Mrs. Walter Bruyninckx
W. W. Bulla
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Mrs. Elizabeth deMoraes
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Russell Dean Footlik
Mrs. Jacqueline Forsyth
Mr. & Mrs. Irving Friedman
Jess L. Fults
O. Rex Furnish
Mary Evelyn Gardner
Thomas & Gail Gebow
Debra Genua
Mark E. & Mary Goldberg
Alan D. Goodwin
Mrs. Patricia Gordon
Susan E. Gordon
Mrs. Nunumae Guertin
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Mr. & Mrs. Ian M. Happer
Mrs. Frederick M. Haynes
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Gilbert N. Hersh
John Heslip & Family
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G. Meg MacDonald
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Mrs. Catherine L. MacLeod
Melissa Matuszczak
Mr. & Mrs. Ray Mehaffey, Jr.
Mr. & Mrs. Don Metzler
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Mr. & Mrs. Randall J. Slade
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Ms. Alison K. Townsend
Dr. & Mrs. Oakleigh Thorne, II
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Mr. & Mrs. Kenneth J. Trimmer
Mrs. Leota C. Underwood
Sheryl Van Gundy
Bill Varga
Linda & John Verbiscar
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Ruth Ann Vogel
Mrs. Ed Walitalo
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Mr. & Mrs. William J. Wells, Jr.
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Col. Maurice W. Wiley
Mr. Leonard Winter
Kevin C. Wirick
Daniel & Lucinda Witt
Mrs. Russell L. Wood
Ms. Margie Wortzman
Ms. Laura L. Wray
Mr. & Mrs. Gerald Wright
Mr. & Mrs. David Yoshinaga

Art on Display

Lovely paintings of wildflowers will be displayed in the Hall from 9 a.m. to 4:45 p.m. from May 26 - May 31. The artist of these works, Carolyn Louise Crawford, has collected and sketched many, many wildflowers but her particular love is of alpine tundra plants. Plan now to view these beautiful examples of botanical illustration.

Scott Wilmore—1896-1982

Memorial services for Scott Wilmore, well-known horticulturist, were held March 23 at Wheat Ridge Methodist Church. Recognition of his many contributions toward establishing Denver Botanic Gardens and beautifying Colorado’s landscape will appear in *The Green Thumb* magazine Summer Issue.

Gardening Tips for May

After what has seemed to be a long, difficult winter, May has finally arrived! Perhaps our Denver winter was neither as bad nor as long as it seemed to be and that my thinking is influenced by weather tragedies nation-wide rather than local. At any rate, the promise of spring is here and all we need to do is take advantage of it.

The first way to take advantage of spring is by attending Denver Botanic Garden's Annual Plant Sale announced elsewhere in this newsletter. Perhaps a few words on selecting and planting your "lucky finds" would be appropriate.

When buying plants, look for quality first and price second. For example, petunias and other bedding plants should be dark green in color, have stout stems and short internodes. In other words, the leaves should be close together. Preferably, they should be branching at the base. This is an indication that they have been pinched back and were grown in uncrowded conditions in a fertile soil. Bedding plants that are tall and stringy will usually be very slow to establish and will require additional pinching back at planting time. This usually sets them back several days to weeks.

I prefer to purchase bedding plants not in flower. It is better to pinch off any existing flowers at planting time because root growth is more important. Plants in flower have a tendency to have slower root growth.

When putting bedding plants out, particularly those in peat pots or in similar "plantable" containers, be sure to break the peat pots in several places to allow root penetration. Plant them so the rim of the pot is below soil level. If the rim is exposed to the air, it will act as a wick, drawing moisture from the root zone.

Plants that are in plastic containers or similar "non-plantable" types will usually have a dense ball of roots. At planting time, use a sharp knife and score the sides of the root ball in several places about ¼" deep. This will promote rooting out into the new soil and prevent the root system from staying within the ball.

Vegetable gardening is the "in" thing and in fact, many are trying to plant vegetables instead of garden flowers. I would like to suggest a companion garden. Many vegetables are attractive in themselves and could be considered companions to the perennials and annuals. Leaf lettuce comes in various textures and colors and makes an excellent edging plant. The red-leafed forms and the crisp varieties add interest to a garden and would thus serve a double purpose; form an edging around the garden and provide salads for your table. The rhubarb variety of chard with its red stems is also an effective vegetable. The same could be said for beets. There is also no reason why onions and chives could not be used as a low edging in the front of the flower garden. And how about a tomato plant or two serving as a background for some of your low-growing annuals? Remember also that this has been declared the "Year of the Bean." Save some room in either your vegetable or flower garden or both, for this one.

Don't overlook the trees and shrubs available at the sale. Spring is the ideal time for tree planting. Many varieties are available but in selecting a tree you should remember that a tree should be considered a permanent investment; one that when properly selected, planted, and cared for, will not only reward you with its beauty and shade, but will enhance the value of your property. Avoid the more brittle, fast-growing trees such as willow, elms, soft maples, and poplars. For more durability and permanence select from the lindens, oaks, green ash, Schwedler maple, or European weeping birch. Though these will cost more in purchase price, they will cost much less in maintenance and repair. Before planting a tree, or a shrub for that matter, check to be sure the space available now will fit the plant when full grown. Too many times trees need to be pruned back severely at the very prime of their lives because of poor site selection at the time of planting.

Try to imagine the ultimate size and growth habit of the tree before you plant. It will pay dividends in the future.

Dr. J. R. Feucht

Around and About the Gardens

During the last days of summer and early fall of 1981 work was started on relandscaping the area at the south end of the parking lot. This area has a shocking history: In the late 1800s it was the site of Denver's Pest House, a shabby two-room cabin where Denver would send its victims of the dread disease of smallpox, to live or die as they could, sometimes unattended.

The area, landscaped once before in the early days of the Gardens, still has many fine conifers. However, with the development of the main gardens, it was neglected, and much unwanted vegetation became established. The area declined in appearance.

This site has many possibilities as it is well protected from the hot summer heat and sun as well as from the cold, dry winds of winter and early spring. The soil is excellent—allowing us to display a number of trees and shrubs not commonly grown here. We have already started planting some new and unusual varieties such as *Oxydendrum arboreum*, sourwood, a small tree grown chiefly for its crimson and yellow autumn foliage as well as white drooping racemes in early summer. Sourwood thrives under conditions suitable for rhododendrons. *Myrica pensylvanica*, bayberry, is a hardy, valuable plant whose fruit is used for bayberry candles. *Cornus Florida* var. *rubra*, the pink-flowered form of flowering dogwood, has flowers composed of four conspicuous rosy-pink bracts in May. *Viburnum plicatum* var. *tomentosum* 'Mariesii,' Marie's doublefile viburnum, is a shrub of medium size and dense, spreading habit. The conspicuous white sterile florets are in globular heads produced in late May and early June—in a double file—hence the common name.

A new pathway made of woodrounds going through the area has also been installed. Trees and shrubs left from the original landscaping were pruned and shaped and a heavy mulch of pine needles was used to help keep the weeds down and preserve moisture in the soil.

I would like to encourage everyone to visit the Gardens this spring to see this redesigned area and at the same time view our beautiful displays of imported tulips from Holland. This year we have used the following varieties in our spring bedding designs: *Tulipa* 'Montgomery,' 'Smiling Queen,' 'Maureen,' and 'Insurpassable.' These four varieties are located in the large flower bed along York Street. We have used 'Asta Nielsen' and 'Renown' around the flag pole. Also be sure to look at our pansy and tulip display just to the south of the Conservatory.

Richard Martinelli
Gardener Florist II

Classes

The trip to the City Nursery on May 3 is full. If you have signed up, please meet at the parking lot of the D.B.G. House at 8:45 or at the nursery at 9:30. (Take I-70 to Smith Road, turn south—the entrance is on the right opposite the City Jail.)

An opportunity to learn how to develop *Environmental Awareness for Pre-Schoolers* will be offered on May 17 from 9:30 - 11:30 a.m., Classroom A. The cost is \$4 for members, \$7 for nonmembers.

Everyone is welcome on May 19 for the *Wildflower Field Trip*. Meet at 9 a.m. at the parking lot of the House, 909 York. No charge and no limit but share gasoline expenses with the driver. Bring lunch.

All other classes in May are full. Please read *the Spring Schedule* as to time, date, and what to bring.

Calendar of Events



May 1982

1)*	9:00-11:30	Education Building—Classroom B	“Spring Flowering Plants of the Denver Area”— Dr. William G. Gambill
		(This class continues on May 15 at 9:00 a.m. and concludes on May 22)	
1)	9:30 a.m.	D.B.G. House—Main Room	Gloxinia Gesneriad Growers
1)*	7:30 p.m.	Education Building—Mitchell Hall	Colorado Cultural Institute
3)*	8:45 a.m.	D.B.G. House—Parking Lot	Field Trip to City Nursery—Dan Dufva
4)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept.
4)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
6)	All Day	Gardens Closed in Preparation for the Annual Plant Sale	
7)	9:30 a.m. - 5:30 p.m.	Education Building & Service Area	ANNUAL PLANT SALE
8)	9:30 a.m. - 5:30 p.m.	Education Building & Service Area	ANNUAL PLANT SALE
11)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
13)	7:00 p.m.	Education Building—Classroom C	Bureau of Land Management
13)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
13)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
14)*	8:00-4:00	Education Building—Mitchell Hall & Classrooms A, B and C	ROMCOE
14)	7:30 p.m.	Education Building—Classroom C	Colorado Mycological Society
14)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
15)	9:30 a.m.	Education Building—Classroom A	Hi Country Judges Workshop
15)*	10:00 a.m.	Education Building—Classroom C	Colorado Mycological Society Class
15)*	5:00-10:00	Education Building—Mitchell Hall	The Nature Conservancy
17)*	9:30 a.m.	Education Building—Classroom A	“Environmental Awareness for Pre-Schoolers”— Ms. Heidi Fine
17)	7:00 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society
17)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
18)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept.
18)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
19)*	9:00 a.m.	Education Building—Classroom C	Colorado Dept. of Health—Air Pollution Control Division
19)	9:00 a.m.	D.B.G. House—Parking Lot	Plant Life Field Trip
19)	7:30 p.m.	Education Building—Classroom C	American Rock Garden Society
20)*	9:00 a.m.	Education Building—Preparation Room	“Making Paper from Plant Materials”—Ms. Gail Boyd
20)	7:30 p.m.	Education Building—Classroom B	Indoor Light Gardening Society
21)*	8:00-3:00	Education Building—Service Yard	Membership Annual Plant Giveaway
21)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
21)*	11:00 a.m.	D.B.G. House—Main Room	Sprigs & Sprouts Garden Club
21)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
22)*	9:00-1:00	Education Building—Service Yard	Membership Annual Plant Giveaway
22)*	9:00 a.m.	Education Building—Classroom C	“Foothills Vegetation”—Jim Ratzloff
22)*	9:15 a.m.	D.B.G. House—Main Room	Rocky Mt. African Violet Council
22)*	10:00 a.m.	Education Building—Classroom A	Colorado Mycological Society Class
22)*	10:30 a.m.	Education Building—Mitchell Hall	Denver General Hospital—Volunteers Brunch
22)*	1:00 p.m.	Education Building—Classroom A	University of Nebraska
23)*	4:00-8:00	Education Building—Mitchell Hall	Colorado State University—Alumni Ass’n.
24)	9:30 a.m.	D.B.G. House—Main Room	Ultra Violet Club
25)*	10:00 a.m.	D.B.G. House—Main Room	Plant Sale Committee Meeting
25)*	4:00 p.m.	D.B.G. House—Main Room	Board of Trustees Meeting
26)	9:00-4:45	Education Building—Mitchell Hall	Botanical Illustrations Exhibit and Sale— Carolyn Crawford, Artist
		(This Exhibition will continue each day through May 31)	
26)*	9:30 a.m.	Education Building—Classroom C	“Lilac Time at the Gardens”—Susan Praetz
27)*	9:30 a.m.	Education Building—Classroom B	African Violet Society of Denver
27)	10:00 a.m.	D.B.G. House—Main Room	Around the Seasons
27)*	7:30 p.m.	D.B.G. House—Main Room	Men’s Garden Club of Denver
28)*	9:00 a.m.	Education Building—Mitchell Hall	Ikebana International

Calendar of Events (cont.)

29)*	10:00 a.m.	Education Building—Classroom A	Colorado Mycological Society—Mushroom Identification Class
29)	1:00 p.m.	Education Building—Classroom B	Old Garden Roses—Symposium of the Denver Rose Society
31)		MEMORIAL DAY—Offices Closed	

JUNE 1982

1)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept.
1)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
2)*	9:30 a.m.	Education Building—Classroom B	“Basic Care of Orchids”—Larry Latta
2)	7:00 p.m.	D.B.G. House—Main Room	American Rock Garden Society
3)*	4:00 p.m.	Education Building—Mitchell Hall	American Iris Society NATIONAL CONVENTION
4)	1:00-4:45	Education Building—Mitchell Hall	Flower Show & Iris Fair—Sponsored by Colorado Federation of Garden Clubs, and American Iris Society
4)*	5:00-6:00	Education Building—Amphitheater	Reception for American Iris Society—NATIONAL CONVENTION
5)	9:00-4:45	Education Building—Mitchell Hall	Flower Show and Iris Fair

Tributes

In memory of Arnold J. Hoiberg
Friends and associates at Mansville Corp.

In memory of Else Schoenfeld
Mr. & Mrs. Edwin W. Baker, Jr.

In memory of William Franklin Smith
Gary C. Canady Family

In memory of John J. Sheehan
D.B.G. Board of Trustees
Solange Gignac
Syd Glick
Andrew Pierce
Joyce Schillen
Margaret Wallace

In memory of Glenn Taylor
Mr. & Mrs. George Wilson

In memory of Mrs. Olive Vetting
Louise Junius

Contributions of cash, goods, or services have been received from the following friends:
Around the Seasons Club
Mr. & Mrs. M. E. Ayers
Cherry Hills Heights Garden Club
Civic Garden Club
D.A.R., Colorado Chapter
Denver Rose Society
Stephen Knight
Petro Lewis Corp.
Nancy Pizarro
Rocky Mountain African Violet Council
The Estate of Doris Adams Shortt
William Tricker, Inc.



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TIME VALUE

Green Thumb Newsletter



Number 82-6

June 1982

Tomorrow's Iris This Spring in Denver

In all the world, the largest display of the newest iris is in Denver. It's the \$100,000 display planting for the American Iris Society's 1982 National Convention at the Denver Botanic Gardens. Irisians from all over the continent and from across the Atlantic and Pacific will travel for a unique opportunity to view the newest iris at one garden.

One hundred and thirty hybridizers have selected a thousand of their choice seedlings from their breeding program. Some have just been introduced into commerce and more will be this year or next. These iris will grace the better gardens of the next decade. A visit now is a look into the future.

June 5, in Mitchell Hall of the Denver Botanic Gardens will be the flower arrangement show featuring iris with the theme **DENVER RENDEZVOUS '82**. The show is jointly sponsored by the Judges Council of the Colorado Federation of Garden Clubs and Region 20 of the American Iris Society. In conjunction with the show in Mitchell Hall, local artists will hold a fair for the display and sale of art portraying iris.

The public is invited without extra charge to visit the 1982 AIS National Convention Garden during regular Denver Botanic Garden hours, seven days a week from 9 a.m. to 4:45 p.m. The show and fair can be visited during the same hours on Saturday, June 5.

Crested Butte Trip

Reminder: A few spaces remain for our weekend in Crested Butte, July 23-25. This will provide an opportunity to learn about the work of the Rocky Mountain Biological Laboratory at Gothic, to see the beauty of summer in the high country and to travel with other flower lovers. We will be taken by van from Denver to Crested Butte on July 23, will be housed in historic St. Patrick's, a renovated church, tour the facilities of the Rocky Mountain Biological Laboratory with their staff, and return to Denver on Sunday, July 25. All transportation from and to Denver, lodging and meals (with the exception of Saturday dinner) will be provided at the cost of \$215 (including \$15 donation to the Denver Botanic Gardens). The initial deposit of \$50 is due by June 7 with the remaining \$165 to follow by June 21st. (Please see May newsletter for more complete details.)

To make reservations please return this slip to Denver Botanic Gardens, 909 York St., Denver, CO 80206 before June 7.

Yes, count me in on the trip to Crested Butte on July 23-25, 1982. Enclosed is my reservation deposit (\$50) or full payment of \$215. \$_____.

Name _____
last first

Address _____
street city zip

Telephone _____
home business

Make checks payable to Denver Botanic Gardens.

Around And About The Gardens

American Iris Society Convention

This year we are proud to welcome the delegates of the American Iris Society Convention. Located just west of the Amphitheater, our AIS Convention garden is the site of approximately one thousand of the newest and most exciting Bearded, Siberian, and Spuria Irises which we have received from hybridizers throughout the United States. Many hours have been put into this display by DBG staff and AIS members.

AIS members and hybridizers across the country have worked to create superior forms, colors, and disease resistance. Special recognition must be given to Jack Durrance who has toiled many hours in the garden over the past two growing seasons to insure a successful display for the Convention. Another of our Trustees, Harry Kuesel, has been instrumental in amassing at the Botanic Gardens one of the most comprehensive Siberian Iris collections in the region, if not the country.

From the time a hybridizer selects promising parent plants, collects and sows the seed, to the actual flowering time, it is usually two and sometimes three years. Only one out of one thousand seedlings is likely to show superior characteristics; an Iris hybridizer could spend half a lifetime tending the seedling bed before a prize Iris would be produced. Considering the odds and time invested, one can appreciate the pride with which these Irisarians send their precious plants to the AIS Convention gardens. At convention time the Irises displayed are voted on by the delegates and a select few hybridizers are honored for their efforts.

In the far northeast corner of the garden are the Irises submitted by local hybridizers, many of whom helped plant and organize the 1982 Convention garden. These plants are eligible for the President's Cup, an award given for the best locally-hybridized Iris. This year, as in the past, the choices will not be easy.

The Iris display last year was a spectacular rainbow of color stretching across the center of the Denver Botanic Gardens grounds. Weather permitting, our AIS Convention garden will be the highlight of the month of June. Try to visit this magnificent display between the 25th of May and the 15th of June and observe the successful efforts of Iris enthusiasts across the country.

—Joann Narverud
Gardener Florist

The Garden Party

The Denver Symphony Orchestra will perform at a special benefit concert for the Denver Botanic Gardens on Wednesday evening, June 9. The program, consisting of

Handel:	Royal Firework Music
Grieg:	Two Elegiac Melodies, Op. 34
Beethoven:	Egmont Overture
Schumann:	Symphony #4 in D Minor
Strauss:	Fledermaus Overture

will be in the outdoor amphitheater, and a picnic supper will be served as part of the admission charge of \$35 per person. The Gardens will open at 5:30 p.m. for the benefit with the picnic supper served at 6 p.m. and the concert starting at 7 p.m. There will be a cash bar. Reservations must be received no later than Monday, June 7.

Bring a blanket to sit on and come join us for this very special Garden Party. Entertainment and fun for all!

Gardening Tips for June

This is the time of year when pests become a problem in most yards and gardens. Strive this year to try more than one technique; that is, more than chemical control as a method of pest management. In other words, see how much of the concept called Integrated Pest Management (IPM) you can accomplish in your garden. IPM is really not new—only its name.

IPM is a concept in which a person employs the appropriate combination of biological, cultural and chemical controls. Note that chemical control is still included. The concept does not intend to eliminate the use of chemicals. Rather, it places emphasis on appropriate controls. Sometimes chemicals are more appropriate than other methods.

IPM has been proven to be a valuable tool in the production of economic crops over the past fifteen years. It has only been recent that the concept has been promoted in an urban situation.

Applications on economic crops perhaps are easier because one is dealing with one crop and one pest under most conditions. IPM becomes a little more difficult in the home grounds where you may be dealing with many kinds of plants with different problems.

To find out how appropriate some of the alternative methods to pesticides can be in an urban situation, Denver Botanic Gardens, in cooperation with Colorado State University, has launched this spring, a joint research project. One of the first goals of the project is to develop monitoring methods; a very important part of a pest management program. Monitoring includes the trapping and identification of various insect pests, thereby determining the exact timing required as well as the most appropriate control for the particular pest. One of the techniques that has been used for several years, particularly with field crops, is the use of insect traps that contain chemical attractants called pheromones. Such traps have already been used at the Botanic Gardens and other locations in Denver to discover the exact flight time of ash and lilac borer. The adult stage of the borer, clear-wing moth, resembles a wasp and is often found in the traps in early May. Knowing this, it is possible then to recommend protection for lilac and ash using a pesticide such as lindane. The chemical provides a barrier so that when the adults lay eggs on a host plant and the eggs hatch, the larvae are killed before they can get into the plant. This is an excellent example of IPM. It is hoped that further research will come along with even better methods including total trapping of insect populations so that pesticides will not be needed at all.

The project will also experiment with insecticidal soaps, some of which are on the market for the control of aphid, mealybugs, white flies, earwigs and spider mites. Insecticidal soaps are basically specific types of fatty acids. Many of them work by penetrating the exoskeleton (outer covering of the insect), thereby eliminating some of the natural protection that the insect has from environmental changes such as temperature and humidity.

Another project will be employing nematodes which are microscopic worms, some types of which are parasitic on important pests. Strangely enough, some nematodes are pests themselves.

Even though we have rather sketchy information about backyard IPM, there are many things you can do and perhaps are already doing to help reduce the use of pesticides. Following are some practical home applications:

Modifying the Landscape

Design or redesign your landscape to reduce the potential of pests. This might include such things as more careful selection of plant types that are less prone to pests. One application of this might be using a linden as a shade tree rather than an elm. Lindens have fewer problems than elms from the standpoint of

both disease and insects. You may also want to select plants that are known to be resistant to certain diseases. This is already a common practice when selecting tomatoes for the vegetable garden. Tomatoes can now be purchased that are quite resistant to fusarium and verticillium organisms. Snap dragons can now be purchased that have less proneness to rust diseases. Other varieties of garden flowers can be selected that are resistant to mildew.

Cultural Management

Modifying cultural practices goes a long way towards controlling and managing pests in the yard. Actually this has been a practice for a long time in turfgrass. By properly mowing, watering and fertilizing to maintain a dense turf, you can control the majority of weeds. Avoiding frequent watering will help reduce some of the disease problems. The same types of cultural practices are used in the vegetable and flower gardens. You can prevent quite a few diseases by avoiding excessing overhead watering. Diseases such as black spot of rose, mildew of sweet peas and botrytis blight in some of the garden flowers can be kept in check by cultural management. By avoiding frequent sprinkling with water and keeping the plants properly spaced so that they do not become crowded will help eliminate the environment for disease development.

Automatic sprinkler systems are perhaps one of the biggest banes in the home gardens from the standpoint of creating an environment for disease as well as growth of weeds. You can change this by modifying the sprinkler system, even changing heads where necessary, so that areas that tend to become over-watered receive less water. If you can zone it so that the flower garden receives less frequent applications of water than the lawn, you will go a long way towards disease control. You'll also have fewer weeds with which to contend.

Biological Methods

There are some biological methods that can be employed in the home garden. A product that has been on the market for several years called Thuricide, also sold under the brand names of "Biotrol" and "Dipel," is a concentration of a bacertium that is harmless to bees and mammals but is quite effective in controlling the larval stages of many moths. This method is effective if used early enough in controlling the cabbage worm, tent caterpillar and even some types of cutworms.

You may also want to experiment with the release of certain types of predatory insects. Most everyone is familiar with the benefits of the lady bug, but it is now possible to purchase many other types of predators to control specific pests even in the home ground situation. Included are lacewing fly, effective against aphids, and a protozoan called 'nosema' for control of grasshoppers. The latter has not been shown to be effective on small scale use, but if an entire community got together and used such methods, grasshopper populations could be kept to tolerable levels.

Research is continuing on alternatives to chemical pest control. Before grabbing your sprayer to control a pest, perhaps it would be best to take the time to check with your County Extension office or the Botanic Gardens for possible alternatives.

—Dr. J. R. Feucht

You Did It Again!

A huge crowd participated in the Annual Plant and Book Sale! Smiles were everywhere in evidence and a good time was had by all. Thanks to all volunteers who gave hours of service and special thanks to Barbara Moore, Chairman, and Ginny Faxon, co-chairman, for all their efforts.

Classes

On June 2 at 9:30 a.m. in Classroom B a session on the *Basic Care of Orchids* will be held. The fee is \$4 for members, \$6 for nonmembers.

Alternatives to blue grass and general *Summer Care of Turf* will be among the topics discussed on June 5. Meet at 9:30 a.m. in Classroom C for this informative class which will be full of timely hints. Fee \$4 for members, \$7 for nonmembers. No limit.

A few spaces remain for *Collecting and Cooking Edible Plants*. On June 9 meet at 1:30 p.m. at Belleview and Birch (parking beside the road). Bring a pocket knife and plastic bags for collecting plants. Then on June 10 meet at 1:30 p.m. in Classroom B to prepare the plants you gathered the day before. The fee is \$10 for members, \$15 for nonmembers.



A special field trip to a special greenhouse is scheduled on June 14. Join us when we visit *Silver Mesa Greenhouses* to see their cacti collection. Meet at 8 a.m. at the parking lot of the House, 909 York, or at 8:30 a.m. at 5201 Brighton Blvd. Go north on York; after the I-70 overpass, go west on Brighton Blvd. to the Riverside Cemetery. Fee \$3 for members, \$6 for nonmembers. Limit 15.

The *Walk at Chatfield Arboretum* on June 15 is full. If you are signed up please meet at 9 a.m. at the parking lot of the House, 909 York, or at Chatfield in the visitors center at 10 a.m. Enter the Arboretum ¼ mile west of the intersection of the Deer Creek Road and Colorado 470. Bring lunch, share gasoline expenses.

Field trips are a perfect way to enjoy the beauty of nature with congenial companions. The *trip on June 16* is free with no limit on participants. Meet at the parking lot of the House, 909 York, at 9 a.m. Bring lunch, share gasoline expenses.

On June 17 meet at the Ramada Inn, Silverthorne at 9 a.m. (Take I-70 west. The Ramada Inn is on the right at the bottom of the hill after exiting from the Eisenhower Tunnel.) The group will then car pool to *Hoosier Pass*. Bring wind gear, carry lunch; dress for hiking, share gasoline expenses. Limit 20. Fee \$3 for members, \$6 for nonmembers.

Learn how to *Choose a Home Lawn Sprinkler System*. Come to Classroom C at 9 a.m. on June 19. Fee \$4 for members, \$7 for nonmembers.

For the field trip to *Golden Gate State Park* on June 22, meet in the parking lot of the House, 909 York, at 9 a.m. or at the Visitors Center in the park at 10 a.m. (Take 6th Ave. west to Golden, then west on Washington Street which becomes Colorado 93; follow it about 1½ mile to the junction of Golden Gate Canyon Road; left on that and drive 14 miles to the Center.) Bring lunch, share gasoline expenses. Fee \$3 for members, \$6 for nonmembers. *State park fee extra*. Limit 20.

There is no limit and no fee for the *Field Trip to Rocky Mountain National Park* on June 30. Meet at the Moraine Park Visitors Center in the park itself at 1 p.m. Take the Bear Lake turnoff in the park. Please call 575-2548 and sign up. Reminder: There is a fee to enter the National Park.

Summer In The Gardens Concert Series

We are delighted to announce the Denver Botanic Gardens-KCFR co-sponsored concerts which began on a trial basis last year will again be a part of summer in the Gardens. The schedule as now planned is:

June 25	Denver Chamber Orchestra
July 7	Aries Brass Quintet
July 21	Boulder Basson Band
August 5	DaCapo Chamber Ensemble
August 27	To be announced.
September 16	To be announced.

All concerts will be held in the outdoor amphitheater and will be on a free admission basis. However, you must have a ticket and they can be picked up only in advance from KCFR or the Gatehouse at the Gardens. You may also send a self-addressed, stamped envelope to KCFR for return mail tickets. These tickets will generally be available three weeks before each concert date.

We are pleased to make this available to our members and to anyone else wishing to attend. Bring friends and join us for a splendid musical evening in the Gardens. The gate will open for ticket holders at 6 p.m. and the concerts will begin at 6:30 p.m.

Welcome

We welcome the following additional participants to the Four Seasons Corporate Affiliates:

Temple Hoyne Buell Foundation
Colorado National Bank
Exeter Drilling Northern Company
First of Denver
Gump Glass Company
Mountain Bell
Pepsi-Cola Bottling Company of Denver
Petro-Lewis Corporation
Samsonite
Schlessman Foundation, Inc.
Bill Wall Homes, Inc.

If you desire additional information on this program, please contact the Development Office of the Denver Botanic Gardens at 355-3456. Participants in the Four Seasons Corporate Affiliates are helping with this on-going program as we continue today's momentum for tomorrow and generations to come.

Family Reunion

An innovative flower show will be presented by the Gloxinia, Gesneriad Growers and Ultra Violet Club on June 12 and 13 at Denver Botanic Gardens. The theme is "Family Reunion" and will include gesneriads and their "cousins," African violets. Many people grow gesneriads and know them by more common names. They are easily grown house plants that reward the grower with beautiful foliage and blossoms. Almost everyone is familiar with African violets. Besides being on display at the show, plants will be on sale and helpful hints will be available through culture sheets and educational tables. The show is free; admission to Botanic Gardens is \$2.00

Help Please

Does anyone have a projector he could donate? The Gardens is in need of one that can handle 2¼" x 2¼" slides. If so, please bring to 909 York. Thank you.



Japanese Festival

A festival patterned after the traditional Kodomo No Hi Matsuri of Japan will be held on June 20 from 11:30 to 3 p.m. Events, scheduled to coincide with the second day of the Bonsai Show, include the following: Tea Ceremony celebrated outside at least twice during the day, guided tours on both Saturday and Sunday to acquaint visitors with the features of Japanese gardens, fun for kids of all ages by goldfish netting with participants keeping the goldfish. There will be concerts on several instruments not commonly seen in the United States including kotos (a kind of lyre), taikoes (Japanese drums), and shamisens (a kind of banjo). Interesting Japanese foods will also be available to please your appetites.

Of course, while here be sure to visit Mitchell Hall and see the striking display of Bonsai. The hours are 10 to 4 p.m. Saturday and Sunday, June 19 and 20. There will be an admission fee of 50¢ for the Bonsai Show.

Tea House

Again this year Kim Thrasher has graciously consented to open the Tea House the first Saturday of each month. Meet at 11 a.m. on June 5 and learn something of the culture and philosophy of Japan.

Don't Cut Them Off

Some people think the withering foliage of the daffodil is unsightly in their flower borders. However, this foliage is manufacturing nutrients to build strong bulbs for next year's bloom. If you wish, you may bunch the leaves together and tie with string or twistems and let them die down of their own accord. You can brighten the borders with summer-blooming annuals like marigolds, zinnias or petunias while waiting.

New England Odyssey

It's travel time again and time to plan to enjoy the glory of the FALL FOLIAGE in the New England States. Plans are under way for a feature trip from September 23rd to October 3rd, 1982 in Massachusetts, New Hampshire, and Vermont!! Visit Boston and its surrounding gardens, climb in the White Mountains and New England's highest Mount Washington. Relax in Shelburne and Sturbridge villages of the past and then botanize in the famous Arnold Arboretum, other private gardens and the incredible Logee's Greenhouses. A trip with many facets to please everyone. Call us at the Gardens or Travel Associates (759-8666) for details. Fall color, scenic beauty and much, much more are awaiting you on what promises to be a superb trip.

Special Seminars at the Wright-Ingraham Institute

This summer the Wright-Ingraham Institute offers one-day field seminars for special groups at the R.T. Parker Center. The seminars will be conducted by experts drawn from the Institute's faculty, and will include lectures and discussions on grasslands ecology, riparian vegetation and watersheds. Subject emphasis can vary according to group interest and background.

The Institute will arrange and provide group transportation to and from major cities (Denver, Colorado Springs, Pueblo, etc.), and will provide lunch at the campus shelters. Time: 9 a.m. - 3 p.m. Basic cost: \$35 per person for groups of 20 or more. Smaller groups can be considered—cost may vary. To arrange a seminar date for your group, please call or write:

Wright-Ingraham Institute
1228 Terrace Road
Colorado Springs, CO 80904
(303) 633-7011

Denver Audubon Society Auction

The Denver Audubon Society invites you to attend an auction on Saturday, June 26, at the Denver Botanic Gardens, from 6:30 p.m. to 11 p.m. Ticket price is \$5.00 (tax deductible).

Funds will be used to advance Audubon programs and to develop the new Audubon teaching Urban Nature Center. The nature center, combined with the Golda Meir home recently relocated to Habitat Park on the South Platte River Greenway, will serve as a community resource for education and research about the natural environment of the Greenway.

The evening will feature oral and silent auctions, the Timbuktu Plus Five, a classical string quartet, wine tasting by Bolla Wines, an ethnic food sale, and celebrity guests. Auction items include original art, rare prints, gourmet dinner certificates, raft trips and other vacation packages, season tickets to live performance groups, memberships to the Zoo and Botanic Gardens, and hundreds of other items of equal value and interest.

Tickets are limited. To order, send a check for \$5.00 per person to: Denver Audubon Society, 1720 Race Street, Denver, CO 80206. Please include your name, address and telephone number. For further information, call 399-3219.

250 New Members in April

A hearty welcome to all new members. We are delighted to have you and hope you will enjoy your association with Denver Botanic Gardens.



THE JOLLY GREEN GARDENER

Plants and Rocks

What do plants grow in? Soil, of course. But what about Waterlilies and Seaweed? What about Orchids and Spanish Moss? It seems strange that plants could grow in water—or even like many tropical orchids, which actually grow in the air. But it seems strange indeed that there are plants that actually grow on rock. The best known rock plants are **Lichens**. Lichens are actually not one plant but two—an Alga and a Fungus which live together. What observant person could miss the lichen painted rocks in our foothill canyons? Dozens of different kinds of lichens paint our rocks with orange, gray, green and even black splashes of color.


Lichens are often the first plants to grow on a rock that is freshly exposed to the sun and air. They secrete acids and begin the gradual breakdown of the

rock, forming a tiny portion of soil on the rock surface.


Into the tiny crevices that lichens form, other plants can often gain a foothold.

Ecologists and other Plant Scientists have even given a technical name for plants that grow in solid rock, these plants are called **Chasmophytes**—which means “Canyon Plants”.

As the ferns and flowering plants which grow in the tiny crevices mature and die, they create larger and larger cracks in the rock. If you look carefully the next time you drive in the mountains, you will often see very large trees—especially pines, like the Ponderosa Pine—growing out of solid rock. You can imagine how quickly a growing, large tree can break up a rock!




Win 1 point for each LEAFY plant growing in a crack. 2 points if FLOWERING.




Playing alone or with a Friend, watch for plants that grow in odd places!

Win 5 points for plants growing anywhere above the ground.



Win 10 points for a plant growing on a moving object.



KEEP SCORE FOR A CERTAIN DISTANCE OR AMOUNT OF TIME

Plants get their food from soil and decaying plants. Cracks in rocks, sidewalks and buildings, rain gutters or holes in fences are natural traps for the leaves and dirt a plant needs to be happy! Try to beat your old score as you get better at spotting plants!



Hens & Chicks

(Sempervivums)



As soon as you see a Sempervivum plant it will be easy for you to understand why they are called Hens & Chicks. The big plant is the hen. It sends out shoots that become little plants, and they surround the big "hen" just like chickens do with their mothers.

There are many types of Hens & Chicks—red ones, green ones, large and small ones, some green ones with red tips and some light green ones with white "cobwebs" across the top.

Succulent plants have fat, juicy leave or stems that store water, and are usually from dry areas that have little soil. In the wild many succulents grow naturally on rocks. Sedums and Sempervivums are the two most commonly found succulents in our gardens. The common English name for Sedum is Stonecrop...which refers to the way so many sedums grow on rocks. Sempervivum means 'Live Forever' because it takes more than a little abuse to kill a Hen & Chick.

Grow a Plant in a Rock:

Visit the Rock-Alpine Garden at the Denver Botanic Gardens, Wednesdays, 1-3 p.m. through July and receive a **FREE** potted Hens & Chicks plant! (*For children only please*)

You will enjoy growing Hens & Chicks in your garden because they will do so well! Plant them in full sun in your regular garden...in the hole of a rock...in a dry stone wall...in an old log, piece of wood or pipe.

If your Hens & Chicks get the correct amount of light and water they will look like a fat **rosette**. If they do not get enough light, the leaves will open very wide to catch all of the sun's rays. Hens & Chicks like to dry out between waterings. They will not die if they get very little water—but the Hen will have more baby Chicks if it receives good Colorado sunlight and fairly regular watering.

Dear Jolly Green Gardener,
I like succulent plants
alot! Here is a joke
about one -
What did the baby
porcupine say to the
cactus?
- Is that you, Mama?
Your friend,
J. Sage
age 5

I want to hear from you!
Mail your plant or gardening
questions, stories and jokes
to: Jolly Green Gardener
909 York St. Denver 80206
Be sure to mention if you
are a member of the
Denver Botanic Gardens
along with your age &
school.
J.G.G.



Calendar of Events



June 1982

1)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Superintendents
1)*	5:00 p.m.	D.B.G. House—Main Room	England-Scotland Tour Group
1)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
2)*	9:30 a.m.	Education Building—Classroom B	"Basic Care of Orchids"—Larry Latta
2)	7:00 p.m.	D.B.G. House—Main Room	American Rock Garden Society—Mrs. Jean Witt, Guest Speaker
3)*	4:00 p.m.	Education Building—Mitchell Hall	American Iris Society National Convention
4)*	12:00-1:00	Education Building—Mitchell Hall	Flower Judging—The Iris Faire
4)	1:00-4:45	Education Building—Mitchell Hall	The Iris Faire—open to the Public
4)*	5:00 p.m.	Education Building—Amphitheater	Reception for AIS National Convention
5)	9:00-4:45	Education Building—Mitchell Hall	The Iris Faire—Flower Show
5)*	9:30 p.m.	Education Building—Classroom C	"Summer Care of Lawns"—Joe Tomocik
8)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
9)*	9:00 a.m.	Education Building—Mitchell Hall	Rehearsal—Denver Symphony Orchestra
9)*	12:00-4:00	Education Building—Mitchell Hall	Solaron Corp.—Stockholders Meeting
9)*	1:30-4:00	Highline Canal at Bellevue-Birch	"Collecting & Cooking Edible Plants"—Ms. Sue McPherson
9)*	5:30 p.m.	Education Building—Amphitheater	THE GARDEN PARTY—Gardens open
9)*	6:00 p.m.	Education Building—Amphitheater	THE GARDEN PARTY—Picnic Supper
9)*	7:00 p.m.	Education Building—Amphitheater	DENVER SYMPHONY ORCHESTRA CONCERT
10)*	1:30 p.m.	Education Building—Classroom B	"Collecting & Cooking Edible Plants"
10)	7:30 p.m.	D.B.G. House—Main Room	Denver Rose Society
10)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
11)*	10:30 a.m.	D.B.G. House—Main Room	Park Hill Garden Club
11)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
12)	9:00-4:45	Education Building—Mitchell Hall	Gloxinia Gesneriad Growers Show & Sale
13)	9:00-4:45	Education Building—Mitchell Hall	Gloxinia Gesneriad Growers Show & Sale
14)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
15)*	9:00 a.m.	D.B.G. House—Parking Lot	"Walk at Chatfield Arboretum"—C. Paxton
15)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Superintendents
15)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
16)	9:00 a.m.	D.B.G. House—Parking Lot	Plant Life Field Trip—Mary Edwards
16)	7:30 p.m.	Education Building—Classroom C	American Rock Garden Society
17)	7:30 p.m.	Education Building—Classroom B	Indoor Light Gardening Society
18)	6:00 p.m.	Education Building—Mitchell Hall	Reception for Bonsai Show Judges
18)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
19)	9:00-4:45	Education Building—Mitchell Hall	Denver Bonsai Club Show & Exhibition
19)*	9:00 a.m.	Education Building—Classroom C	"Choosing a Home Lawn Sprinkler System"—Bob Wecal
19)*	10:30 a.m.	Education Building—Classroom B	Park Hill Methodist Church
20)	9:00-4:45	Education Building—Mitchell Hall	Denver Bonsai Club Show & Exhibition
20)	11:30-3 p.m.	Japanese Garden & Tea House	JAPANESE FESTIVAL
21)	7:30 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society
22)*	6:30 p.m.	D.B.G. House—Main Room—Front Lawn	Wheat Ridge Men's Garden Club
22)*	7:30 p.m.	Education Building—Mitchell Hall	"English Gardens"—Patricia, Countess of Jellicoe
24)*	9:30 a.m.	Education Building—Classroom B	African Violet Society of Denver
24)*	10:00 a.m.	D.B.G. House—Main Room	Around the Seasons
24)*	7:30 p.m.	D.B.G. House—Main Room	Men's Garden Club of Denver
25)*	6:30 p.m.	Education Building—Amphitheater	KCFR Radio—Chamber Music Concert
26)	6:00 p.m.	Education Building—Mitchell Hall	Denver Audubon Society AUCTION

JULY 1982

1)	7:45 p.m.	Education Building—Mitchell Hall
4)*		Education Building—Mitchell Hall

Denver Orchid Society
American Rock Garden Society National Convention

* Members or Enrollees only

Tributes

In memory of Mrs. W. E. Brock
Mr. & Mrs. D. Bert Hougland

In memory of Harry Hawkins
Lynn and Peggy Lehmann

In memory of Paul Hulitzky
Mr. & Mrs. Michael McLaughlin

In memory of Mrs. Alonzo Lilly
Mrs. T. D. Cunningham
Mrs. Richard M. Davis
Mrs. Pierpont Fuller
Mr. & Mrs. Robert S. Gast
Mrs. Hugh M. Kingery
Mrs. Walter K. Koch
Mrs. C. Dean Lausten
Helen P. Lilly and Edith C. Truslow
Mr. & Mrs. J. Kenneth Malo
Mr. & Mrs. Harold Nordstrom
Mr. & Mrs. F. George Robinson
Mrs. A. G. Rydstrom
Mrs. Margaret M. Wilber

In memory of Harry W. Nelson
Trudy Currigan

In memory of Steven Oppe
Beverly Nilsen

In memory of John J. Sheehan
Mr. & Mrs. George Dowd
Mary Egleston and Katherine Conroy
Larry Latta
Susan Praetz

In memory of Scott Wilmore
Moras and Erne Shubert

Contributions of cash, goods, or services have been received from the following friends:

City Floral, Inc.
Mrs. Sue Eloie
Ms. Gertrude S. Hausmann, M.D., in honor of the
100th birthday of Agnes Giesecke
Tom Keesling
Mrs. Willie King
Morning Belles Garden Club
Bob Pinto
Mr. & Mrs. William R. Thurston
Mrs. Betty A. Woolums



Lecture On English Gardens

Patricia, Countess of Jelliceo, will present an illustrated lecture on June 22 at 7:30 p.m. in Mitchell Hall. The topic of her lecture, “The Romantic Revolution of the 18th Century English Garden,” deals with the transformation of the early English garden under Burlington, Kent and Pope which was inspired by classical painters Claude and Poussin and evolved later into the work of “Capability” Brown. This is often considered the peak of the English garden concept before the later eccentricities of the “noble savage,” the Anglo-Chinese garden and “Gothicism.”

Tickets for the lecture, which cost \$4 per person, are available in the Gift Shop of the Gardens.

Internship Available

The Audubon River Trails Nature Center in Pueblo currently is offering 10 to 16 week Horticulture Internships. Duties include giving educational programs on plant propagation and germination, coordinating volunteers in greenhouse management, ordering greenhouse supplies and stock, and operating plant sales shop. Living accommodations are provided along with a small stipend. For further information please write Tom Cowper, Ranger-naturalist at the Nature Center, 5200 W. 11th St., Pueblo, CO 81003 or call 545-9114 in Pueblo.

Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2548

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TIME VALUE

June 1982

Address correction requested

Green Thumb Newsletter



Number 82-7

July 1982

Summer Serendipity

*Thursday, July 29,
6:00 p.m.*

*Solar Energy
Ragtime Band
a special event
for members only*

Summer Serendipity on July 29

A special event for members only!

Stroll the gardens (gates open at 5:30 P.M.), chat with experts in the daylilies, roses and perennials. bring a blanket and your picnic, and toe tap to the strains of Solar Energy Ragtime Band.

Admittance by your membership card please.

Gardening Tips for July

Take advantage of this time of year to keep up with pest control in your garden. Hot weather brings about increased insect activity as well as the prolific growth of weeds.

Spider mites usually abound at this time and if allowed to go unchecked, can cause considerable damage. Your junipers are likely targets but they may be found on most any plants in the garden.

Many miticides are available such as Kelthane and Diazinon. Be sure to follow the label carefully and allow lead time when using any of these on vegetable crops or other edible plants. In most cases, a two-week waiting period is necessary before harvest.

You can also control mites with some degree of satisfaction by simply washing the plants frequently with a stream of water. You may prefer this method for edible crops rather than risking a pesticide residue on the vegetables. You might also want to try insecticidal soaps.

Tomato hornworms are likely to begin their activity now. If caught early enough with sprays of Carbaryl (Sevin), they won't have a chance to grow to the large size at which they are so destructive. When the worms are young they are hard to see. One method of detection is to look for signs of chewing on the foliage. Another is to check frequently for black droppings. Some gardeners prefer to simply pick them off by hand but this takes good eyesight and a great deal of time.

Weeds should be abundant now. Most of the annual types are easily controlled through cultivation. Perennial bindweed and quackgrass are two big problems. Until recently no satisfactory control could be found. Now, many stores carry a rather expensive but effective bindweed control called ROUND UP or Kleenup. You should allow at least two weeks for the chemical to take full effect. It will actually move through the root system and in the case of quackgrass, even kill the runners. I have found a second application on bindweed is sometimes necessary. One treatment on quackgrass and other grassy weeds is enough.

Don't be tempted to dig bindweed out of the garden. This simply propagates it. Cutting the fleshy roots causes them to branch much the same as hand-digging dandelions, leaving part of the root in the ground to continue growth.

Hot weather usually brings about an abundance of hard-to-kill weeds like spurge and purslane. These are not difficult to control in cultivated areas but in the lawn, even the best chemicals don't work too well. Control is best accomplished by keeping the lawn in good vigor. Avoid frequent, light watering. This only encourages the weeds with which the lawn must compete. Avoid cutting the lawn too short. This increases its need for water, discourages deep rooting and encourages the weeds.

To beat the heat, why not take a trip to the alpine regions to enjoy the spring flowers that will be showing now. The abundant moisture should result in one of the best and most colorful displays in years.

You'll find carpet-like mats of Alpine Sandwort, the tiny, pink flowers of Moss Campion, Alpine Spring Beauty, Jacob's Ladder and if you look closely, the delicate, tiny, blue flowers of the Forget-Me-Not. In fact, it is possible to find as many as fifty different alpine flowers in bloom at one time, starting about the middle of this month.

An excellent guide for such a trip is the book, "Meet the Natives", by M. Walter Pesman, available at the Gift Shop of the Denver Botanic Gardens. You will also find a large selection of other literature on plant materials at the Gift Shop.

Around and About the Garden

Rock Gardens are frequently criticized for their seasonality; certainly a rock garden can be bright and even dazzling in the spring — sprinkled with bulbs in March and April with a triumphant peak attained in May and June. Nevertheless, a rock garden need not be ignored at other seasons.

Those who visit the Rock Alpine Garden in July will be surprised at the amount of color that still lingers. Campanulas are the backbone of a rock garden, with over three hundred species recorded for this genus. Few Campanulas are not attractive, and almost all bloom in the summer months. Calceolarias are usually associated with stuffy "Pocket-book plants" in florist windows. This immense, Central and South American genus includes shrubs, small trees and a welter of delightful matforming perennials, some of which will be in bloom this summer. The most vigorous of these has been The Falkland Islands Calceolaria, *Calceolaria falklandica* which has braved three winters thus far with impunity. We hope it has survived as well in its beleaguered native habitat. *Calceolaria mexicana* and *C. pinnata* are annual species that are nevertheless graceful and wild looking enough for a rock garden. These bloom prolifically throughout the summer. The real glory of the summer months are two very different groups: Gentians and Zauschnerias reserve their splendor for July and August. The cool blue gentians and hot scarlet California Fuchsias are well represented in the Rock Garden with over fifty species of the former and ten varieties of the latter.

Of course, a rock garden does not rely entirely on flower for its interest. Come visit to enjoy the textures of foliage and rock, rosette and conifer. Come see a corner of the mountains in the middle of the city.

Panayoti Callas
Curator of the
Rock Alpine Garden



Congratulations to

Solange Gignac, librarian of the Helen Fowler Library, on her election to the presidency of the Council on Botanical and Horticultural Libraries, Inc.

Botany Club, Friday July 16, 7:30 PM. The Herbarium

Please bring plants to identify.

Just Planted — For the 50th Anniversary of Mile Hi Girl

Scouts Recently a ceremonial tree, *Crataegus macrosperma*, was planted near the main fountain to salute Girl Scouts on their 50 years of service in the Denver area.



Joint Advertising Campaign

This summer local newspapers as well as the air waves of radio and television will be filled with public service advertising urging you to "Entertain Your Brain" at the Denver Botanic Gardens, or the Denver Art Museum, or the Denver Zoo, or the Denver Museum of Natural History.

This public service advertising campaign, a cooperative venture of the four cultural institutions, came about because of dropping attendance at most of them now that city/state funding cuts have forced all four to charge admission.

Since the four institutions must now depend upon gate admissions for significant portions of their incomes, there was real concern because admissions have been falling off. Under the leadership of W. Scott Moore, a trustee of the Natural History Museum and chairman of its Marketing Committee, the four organizations met in mid-April to discuss the problem and agree on a course of action to solve it.

Natural History Museum Marketing Committee members Phil Karsh of the advertising agency Karsh & Hagan and George Sharpe of The Denver Consulting Group marketing research firm proposed a joint public service advertising campaign to run from mid-June to Labor Day in September.

Four Denver area advertising agencies agreed to volunteer their creative talents in developing the radio, television, and print ad campaigns: Evans & Bartholomew, Karsh & Hagan, Neuwirth Koller, and Tracy-Locke/BBDO. At press time for this newsletter, it appears that large segments of the broadcast and print media in the Denver metro area will be helping the campaign by carrying the ads.

The advertising for the Botanic Gardens was developed by Tracy-Locke/BBDO and invites people to visit the Gardens and find themselves in another world, a place where beauty can let their imaginations take them to a Paradise Found.

The enthusiastic staff at Tracy-Locke, whose talents were donated to the Gardens, worked hard not only to produce a quality advertising campaign in record time but also were very successful in getting others in both the creative and technical sides of support businesses outside of Tracy-Locke to volunteer their services to benefit the Botanic Gardens.

For donated services in this advertising campaign, the Denver Botanic Gardens is indebted to:

Tracy-Locke/BBDO and Don Mitchum, president; John McLagan, executive vice-president; Jerry Murff, creative director; Cheryl Steinberg, copywriter; Clarice Bonzer and Shan Price, art directors; Robynjill Harwood, producer.

Communi-Creations which donated studio time, personnel time, sound effects and music for the radio ad; its president Don Spencer as well as Carol Williams, officer manager, Paul Vastola, chief engineer, and Michael Carroll, music consultant.

For donated voice talent, Bob Lee on the radio ad and Bill Hesson on the television commercial. For prints of the slides used in the TV ad, Rusty Pallas of Pallas Photo.

WickerWorks Video Productions, Inc., for taping the DBG television ad and Terry Wickre, president; Kathy Hagan, vice president of production; Doug Smith, editor.

KBTB, Channel 9, for donated production time and personnel time for the production of the tapes for the television commercials of all four institutions; Charles Leasure, general manager; Mardee McKinley, vice-president public affairs; Cathy Masterson, production coordinator; Carolyn Holbert, producer of public affairs.

And for research to test the effectiveness of the campaign for all four institutions to George Sharpe and the staff at The Denver Consulting Group.

Terrace and Garden Tour

Today let us all take the advice of a man who "turned to the prosperities of his hearbes and flowers for the delight and comfort of his . . . mind, which he may be himselfe or in fellowship of his friends conceive, in the delectable sightes and fragrant smells of the flowers, by walking up and downe and about the garden."

The Denver Botanic Gardens Twenty-first Annual Terrace and Garden Tour will be held this year on Thursday, July 22nd from 9:30—5:30. Don't miss this opportunity to see eight outstanding Boulder gardens. One cannot help but be impressed by the creativity and versatility shown. Here you will see a large suburban garden, a formal city garden and a spectacular classic English rock garden. You'll find the largest collection of hardy cacti and succulents in this region, rhododendron, azaleas, eastern dogwood, one of three Western white pine in the state, and many other unusual trees. Also included are a low maintenance entrance followed by a back yard of dense forest offering a sense of seclusion and a patio which is a bird-watcher's delight. Don't miss the alpine rock garden done in pastels or the "average" city homesite which hides many surprises behind its gate, including a trout stream, aspen and seclusion. All in all, this tour is one of our most exciting ever and well worth the trip to Boulder. The price is still \$5. Tickets will be available in advance at the Botanic Gardens or at any of the included homes on the day of the tour.

Rhizomes for Sale

Some of the very special iris that were not returned to their growers after the Iris Convention, will be sold on July 10 at Southglenn Mall. Call Tom Magee, 798-5371 for details.

346 New Members in May!

A hearty welcome to all of you. We are delighted to have you and hope you will enjoy your association with Denver Botanic Gardens. Special thanks to the 370 people who renewed their membership.

Tea House

The Tea House in the Japanese Garden will be open from 11 — 12 on July 3. All welcome.

Classes

Always in July we seize the moment and schedule *Field Trips*. Of necessity, the majority of trips are of limited size so don't delay in signing up. Please remember if you have signed up and cannot attend, call and inform us; the people on the waiting list will thank you. Also please remember we cannot refund amounts of less than \$5.00.

The field trips are as follows: *Mt. Goliath and Summit Lake* full, July 12. Meet at 8 AM at the parking lot of the House, 909 York, or at 9 AM at Echo Lake Lodge. Take I-70 to Idaho Springs and the Mt. Evans Exit to Echo Lake; *Columbine Field Trip*, July 17, full. Meet at 8 AM at the parking lot of the House; *Field Trip to the Continental Divide*, July 19. Meet at 7:30 AM at parking lot of House or at 9:30 AM at the parking lot on the right immediately after you exit from the Eisenhower Tunnel of I-70; *Plant Life Field Trip*, July 21. Meet at 9 AM at the parking lot of the House; *Guanella Pass*, July 23, full. Meet at parking lot of the House at 9AM. Bring lunch and share gasoline expenses on all of these. All, with the exception of July 21, are limited in size and cost \$3 for members and \$6 for non-members.

The *Herb* class on July 14 is full. Other classes include *Arranging Lessons Using Fresh Flowers* on the Tuesdays of July 27–August 17, 9:30 — 12 noon, Classroom B. The cost is \$20 for members and \$35 for non-members; please bring material as listed in the *Summer Schedule of Classes*. Sign up now (three spaces remain as of this writing) but remember this warning from Ogden Nash: "When her husband walked off into the dawn... (she) kept on arranging flowers (and) never noticed he was gone... Beware of floral arrangements. They lead to marital estrangements". Finally a good opportunity to learn some skills and to be helpful to the Gardens at the same time, will be provided in *Seed Collecting and Distribution*. This will be held on three Wednesdays, July 28, August 25 and September 29, 9:30 — 11 AM, Classroom A. After training you can help us collect, sort and distribute seeds for our International Seed lists. The fee for this class is \$10.

The Garden Party

The Garden Party benefit picnic supper and Denver Symphony Orchestra concert on June 9 was successful in raising funds for the Botanic Gardens.

The event drew 550 guests who enjoyed an evening visit to the Gardens with the iris display at its peak. The success of The Garden Party was due in part to the efforts of Ellen Waterman, chairperson of the Public Relations Committee of the Gardens under whose guidance The Garden Party was set up, and Devon Billings, head of The Garden Party Committee whose expertise in managing fund-raising events proved invaluable.

Both Waterman and Billings have insisted that the greatest share of bravos for the success of the evening should go to the anonymous donor whose generosity to the Gardens made possible the appearance of the Denver Symphony Orchestra: "This marvelous gift made The Garden Party the success that it was, and we hope it will be possible to have a benefit like this again next year with an even larger attendance so that the Gardens can welcome many more friends whose support can help the Botanic Gardens grow even better."

Colorado Watercolor Society

12th Annual Exhibit
of Watermedia Paintings

to be held at the,
John C. Mitchell Hall

July 10th thru 18th
10 a.m. — 4 pm.

Public reception:
Sunday, July 11th, 2—4:30 p.m.



The colorful exhibit has been juried by Bill Joseph, Professor at Loretto Heights College, whose sculpture is on permanent display at the Gardens. A portion of the proceeds will be donated to the Botanic Gardens along with a memorial for Ann McCall, charter member of the Colorado Watercolor Society. Members of the society will be present daily from 10 a.m. to 4 p.m. to discuss techniques and interpretations with visitors.

Lecture on Western Orchids

Dr Charles Sheviak, Curator of Botany at the New York State Museum, will present an illustrated lecture on "New Studies of Western *Spiranthes*" on July 22, 7:30 P.M. in the Hall. Dr. Sheviak, formerly Director of the Endangered Plants Program of Illinois, is an expert on orchids in particular with special interest in *Spiranthes*. Dr. Sheviak has come to this area in response to a sighting as reported in the October 1981 Newsletter. Free and all welcome.

Introductory Meeting for the Gardens 'New England Odyssey'

Sunday July 11th 2:30 P.M.

Main room D.B.G. House

We will show you some of the visual highlights of our exciting fall color trip to New England — the best time to visit this part of our nation. On hand will be Gayle Weinstein, Botanist Horticulturist and leader for the tour, and Andrew Pierce, the Assistant Director, who will explore the area with slides. Dennis Breil from Travel Associates will be on hand to discuss details.

Rose Workshop

The Denver Rose Society will present a free workshop: Roses for Home and Show on July 25, 9 A.M. to noon, John C. Mitchell Hall. Bring cut roses with 12 to 18 inch stems with leaves attached in water filled containers. If arrangements are desired bring containers and contrasting branch material. For further information call Joan Franson, 424-3942, Zoe Albrecht, 333-3547 or Winifred Markley, 322-3301.

**ROSES. How to Select, Grow and Enjoy.**

Richard Ray and Michael MacCaskey.

H.P. Books. Tucson. 1981.

SB 411 R390.

Beginning rose growers as well as experienced gardeners will appreciate **Roses**, a good basic reference for selecting, growing, exhibiting, and enjoying roses. Step-by-step photographs, drawings, and a concise text aid in teaching the reader the art of rose culture. The authors have simplified the task of selecting varieties of roses by listing them under common unique traits: fragrant roses, cold weather roses, easy to grow roses, etc. Illustrations of roses in different landscapes and suggestions for use in the reader's own landscape offer the rose gardener new ideas. While a large portion of the photographs and descriptions center on some commercially available varieties, the photographs do not portray roses in their prime. They do, however, represent relative flower color. The discussions accompanying these photographs give detailed descriptions of plant form and flower characteristics, so knowledgeable selections can be made. **Roses** is a practical, well-organized, and well-written guide which encourages gardeners to discover and enjoy roses.

Linda Brown

GROWING ORCHIDS: CYMBIDIUMS AND SLIPPERS.

J. N. Rentoul.

University of Washington Press. Seattle and London. 1980.

SB 419 R 4576 1981.

From the first page of this well-crafted book, the many years of plant-growing experience behind it are obvious. Although this experience is singularly Australian, it demonstrates evidence of such intelligent and patient work, observation, and thought that the book's instruction is surprisingly universal. Few gardening how-to-work books achieve this far-ranging applicability. Limiting the subject to just two genera, Cymbidiums and Paphiopedilums, enables a depth of coverage both rare and satisfying. Included are extensive lists of species' descriptions, historical perspectives to modern hybridizing, and practical coverage of growing the plants. Approximately 130 color portraits and many clear, pertinent monochrome photographs embellish its instructive value. Few Cymbidiums are grown by hobbyists in Colorado, but this book should spark new interest and should help growers find success with this rewarding group. Since Paphiopedilums are so popular, it will certainly become a standard reference for many orchidists of the area and deservedly so.

Larry Latta

MORE OTHER HOMES & GARBAGE.

Jim Leckie, Gil Masters, Harry Whitehouse, Lily Young.

Sierra Club Books. San Francisco. 1981.

TH 4812 M6740 1980.

"Fantasy is fun; design is hard work." This quote from **More Other Homes & Garbage** captures the theme of the book. Conversion tables, data tables, and mathematical formulae are included to enable one to plan, evaluate, and design almost any type of alternative energy system. Wind generators, water generators, and photovoltaic panels can be used for producing electricity. Active and passive solar systems can be designed and built to supply heat and hot water for homes. Waste handling, water purification, agriculture, and aquaculture are treated extensively and thoroughly. The scope of the book goes beyond just the mechanical aspects of the systems and presents convincing reasons for a return to the independent production of energy for our culture. The information provided makes it possible to achieve this goal. This book is not one which is read cover to cover for relaxation; it is, however, a comprehensive and remarkable guide to the many strategies available to one interested in self-sufficient living.

Bert Hansen

ORNAMENTAL GRASSES. Roger Grounds.

Van Nostrand Reinhold Company. New York. 1981.

SB 431.7 G79.

Part I of the book is a short course on the structure and identification of grasses. Descriptions are based on terms in this section, and because not all grasses mentioned in the book are illustrated, it might be helpful to skim this section if you are not familiar with the parts of a grass plant. It is technical in description, but good drawings are provided to help make learning the structures and identification points fairly easy. Average gardeners might enjoy "broadening their horizons" by giving it a try. Part II divides the ornamental grasses into three sections by size. All grasses mentioned have descriptions, methods of propagation and cultivation, "garden merit" and habitat. As mentioned, not all grasses have illustrations, which may be disappointing for the gardener looking for ideas. Some of the descriptions can be ambiguous, e.g., a delightful grass. . . , an elegant grass. . . , and I suggest that the reader find a few more grass books to supplement this one when planning garden space that will use grasses.

Nancy Kozakewich Barz

THE POCKET ENCYCLOPEDIA OF INDOOR PLANTS.

Age Nicolaisen.

Blandford Press. Dorset. Reprinted 1981.

SB 419 N513.

The Pocket Encyclopedia of Indoor Plants, first appearing in Scandinavia, is a handy reference for worldwide use. In addition to the 150 beautiful, colored illustrations, 100 interesting drawings are presented in varying proportions of black, white and green. It includes a useful section on general care for house plants and descriptions and cultural requirements for 350 plants, arranged by family in standard format for easy reference. While many familiar species of indoor plants are discussed, there are some uncommon ones also, which may require some searching in the U. S. should the reader wish to obtain them. The author's extensive use of "soil-less mixture" consists of peat with the most important nutrients added. Preferring his own plant food mixture, Nicolaisen gives his formula for making "fertiliser" with instructions for use. He does not, however, discourage using commercial plant food. With the above two exceptions, cultural directions are similar to U.S.-published house plant books, and the book contains much good information.

Helen Zeiner

HOW TO SELECT, USE & MAINTAIN GARDEN EQUIPMENT.

T. Jeff Williams.

Ortho Books. San Francisco. 1981.

SB 454.8 W4553.

This 96-page soft cover volume provides much information for the gardener who needs to know about garden equipment. The chapters include: garden equipment basics; digging, raking and weeding; caring for your lawn; pruning and chainsaws; watering and pest control; and maintaining your power equipment. All of the equipment illustrated are the latest designs, except for the D-shape grip on short handles made out of wood and metal. True-Temper has constructed a Super "D" one-piece poly handle which reduces shovel weight and increases wear value. This book is highly descriptive in tool design, use and maintenance.

Jim McVey

THE WONDROUS MUSHROOM: Mycolatry in Mesoamerica.

R. Gordon Wasson.

McGraw Hill Book Co. New York. 1980.

F 1219 R38 W38.

Primarily written from an anthropological rather than a botanical viewpoint, this book provides fascinating reading to all persons interested in the ancient association between mankind and hallucinogenic plants. The author deals with etheogenic mushroom use among both historic and prehistoric indigenous peoples of Mesoamerica. Mushroom use today is documented from his own personal research and experience, and Wasson attempts to trace its ritual continuity out of prehistory by illustrations from art, archaeology, and oral literary traditions of the Pre-Columbian world. He emphasizes the mind's awesome expansion, the deep spiritual meaning, and the great time depth associated with hallucinogenic mushroom rites in both ancient and modern times. While some

archaeologists might argue with more speculative interpretations of prehistoric evidence, I feel Dr. Wasson's well written book offers new insights into mycolatry study and its special relationship to the culture of Mesoamerica.

Jane Stevenson Day

THE HERB BOOK.

Arabella Boxer and Philippa Back.

Octopus Books. London. 1980. 224 pp.

SB 351 H5 B6847.

The Herb Book provides a well-illustrated and carefully-organized introduction to herb history, gardening, and uses. Although it does not contain a bibliography, the authors are knowledgeable and unpretentious. Herb history is briefly treated, and the book's emphasis is upon contemporary cultivation, enjoyment, and uses of herbs. Both indoor and outdoor herb gardening is thoroughly presented, giving attention to herb selection, composting, and transplanting. The cooking section comprises half of the book featuring a complete array of food recipes: pates, sauces, vegetables, and standard meat and fish entrees. Appealing, fine-quality photographs accompany many of the recipe selections. In addition to the gourmet section, the authors have included simple-to-follow recipes for beauty and perfumery enthusiasts, which includes lotions, sachets, fragrant oils, and the like. Assuredly, this book is a thoroughly enjoyable introductory experience to herbs.

Elizabeth Chambers



THE REVIEWERS

Linda Brown—President, Denver Rose Society; Miniature Rose Test Garden Supervisor, Denver Botanic Gardens; Member -American Rose Society and Arapahoe County Rose Society.

Larry Latta—Botanist/Horticulturist, Conservatory and Promeliad Pavilion, Denver Botanic Gardens.

Bert Hansen—Manager, Residential Energy Systems, Denver.

Nancy Kozakewich Barz—Colorado Native Plant Society.

Helen Zeiner—Honorary Curator of Katherine Kalmbach Herbarium, Denver Botanic Gardens.

Jim McVey—True Temper Sales Representative, Denver.

Jane Stevenson Day—University of Colorado, Boulder.

Elizabeth Chambers—Master's Degree in Folklore; Herb Gardener and Herb Cook.

Genevieve M. Kruzel—Editor.

Solange G. Gignac—Librarian.

LIBRARIAN'S MESSAGE—Thank you to the patrons and to the volunteers who have contributed toward making this year's Book Sale highly successful. I would appreciate your continued support. Books are accepted for donation to the Denver Botanic Gardens Library throughout the year.

Calendar of Events



July 1982

1)*	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
3)	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
3)	11:00 p.m.	Japanese Garden—Tea House	Tea Ceremony—Mr. Kim Thrasher
4)*	9:30 a.m.	Education Building—Mitchell Hall	American Rock Garden Society National Convention
6)*	9:30 a.m.	Education Building—Classroom B	Parks and Recreation Dept. Superintendents
6)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
7)*	7:00 p.m.	Education Building—Amphitheater	KCFR Radio Concert (Gates open 6:30)
9)	10:00-4:00	Education Building—Mitchell Hall (This exhibition is open daily through July 18th)	Colorado Watercolor Society Show & Sale
9)	7:30 p.m.	D.B.G. House—Main Room	Denver Dahlia Society
11)*	2:00-5:00	Education Building—Mitchell Hall	Reception—Colorado Watercolor Society
11)	2:00 p.m.	D.B.G. House—Main Room	Northeast Travel Tour Group
13)*	7:00 p.m.	Education Building—Classroom C	American Society of Landscape Architects
15)*		Education Building—Classroom C	Interior Design Internship
16)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
16)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
18)	9:00-4:45 p.m.	Education Building—Lobby Court	American Hemerocallis Society SHOW
19)*	10:00 a.m.	D.B.G. House—Main Room	The Associates Board Meeting
19)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
20)*	9:00-3:30	Education Building—Classroom C	Colorado Air Pollution Control Division
20)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Superintendents
20)	7:00 pm..	D.B.G. House—Main Room	Denver Stamp Club
20)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
21)	7:00 p.m.	Education Building—Amphitheater	KCFR Radio Concert (Gates open 6:30)
22)*	9:00-5:00	Boulder Area	Guild "Terrace & Garden Tour"
22)*	7:30 p.m.	Education Building—Mitchell Hall	"Orchids of Colorado"—Dr. Sheviak
22)	7:30 p.m.	D.B.G. House—Main Room	Mens Garden Club of Denver
25)	9:00-4:45	Education Building—Mitchell Hall	Rose Workshop—Denver Rose Society
25)*	1:00 p.m.	D.B.G. House—Front Lawn	Denver Rose Society Picnic
27)*	9:30 a.m.	Education Building—Classroom B (This class continues each Tuesday at 9:30 am. through August 17)	"Flower Arranging"—Avalonne Kosanke
27)*	10:00 a.m.	Education Building—Classroom A	Guides Committee Meeting
27)*	1:00 p.m.	Education Building—Herbarium	Herbarium Committee Meeting
27)*	4:00 p.m.	D.B.G. House—Main Room	Board of Trustees Meeting
28)*	9:30 a.m.	Education Building—Classroom A	"Seed Collecting and Distribution"
			Andrew Pierce, Panayoti Callas
28)*	12:00 noon	D.B.G. House—Dining Room	Colorado Garden Show, Inc.
29)*	Open 5:30	Education Building—Amphitheater	"Summer Serendipity"—Solar Energy Ragtime

AUGUST 1982

3)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Superintendents
3)*	7:00 p.m.	Education Building—Classroom A	"Small Space Gardening"—John Brett, Elise Huggins
3)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
5)*	9:00 a.m.	Education Building—Classroom C	"Growing Vines"—Susan Praetz
5)*	7:00 p.m.	Education Building—Classroom A	"Small Space Gardening"—John Brett, Elise Huggins
5)*	7:00 p.m.	Education Building—Amphitheater	KCFR Radio Concert (Gates open 6:30 p.m.)
5)	7:45 p.m.	D.B.G. House—Main Room	Denver Orchid Society
6)	9:00-4:45	Education Building—Mitchell Hall (This exhibition runs each day through August 15th)	Denver Artists Guild SHOW & SALE
7)*	9:00 a.m.	Education Building—Classroom A	"Small Space Gardening"—John Brett, Elise Huggins
7)	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
7)	11:00 a.m..	Japanese Garden—Tea House	Tea Ceremony—Mr. Kim Thrasher

* Members or Enrollees Only

Tributes

In memory of Mrs. George Boyer
The Perennial Garden Club

In memory of the Father of Arlene and Terry Brockel Mrs. N. W. Hyland
Frank C. Mansfield

In memory of Mrs. Edith Edwards
Ms. Syd Glick
Mr. and Mrs. Merle Moore
Beverly Nilsen

In memory of Martin Freeland
Katherine D. Bermingham
Lettie Brunel
First National Bank in Golden
Carol Morris

In memory of Mr. H. Gene Harrison
Dolores Harrison

In memory of Mr. and Mrs. Elmer Hartner
Maxine Hartner Sawyer Atkinson

In memory of Mrs. Alonzo Lilly
Mr. J. C. Blickensderfer
Mr. and Mrs. Bruce Butler
Elizabeth and Emerson Ellett
The Garden Club of Denver
Mr. and Mrs. Edward T. Gerhardy
Helen Grant
Mrs. William W. Grant, III
Mrs. Edward F. Harrison
Mabel and Clarence Hoper
Ikebana International,
Denver Chapter
Hover T. Lentz

Barton L. Lilly
The Monday Literary Club
Margaret and John Mott
Mr. and Mrs. Jerome Nagel
Ms. Suzanne T. Pierce
John Prosser
Mrs. B. F. Salzer
Mrs. Fred Seale
Mrs. Morley B. Thompson
Mr. and Mrs. Robert H.
Waterman

In memory of Ann McColl
Colorado Watercolor Society

In memory of Mrs. Anna Sackett
Bill and Evelyn Murrow, and Bruce

In memory of Sarah Shaw
Mr. and Mrs. Robert Appel

In memory of John J. Sheehan
Tim Tulloch

In memory of Mrs. Bayard K. Sweeney, Jr.
The Garden Club of Denver
Mrs. and Mrs. John Fleming Kelly
The Perennial Garden Club

In memory of Edith Davis Whitaker
Ida Davis Bullington
Davis Bros. Inc.
Jean Temple Davis
Ruth Ann Gartrell
Percy Gartrell
Mrs. Roger C. Gifford
Edward and Elaine Goldman
Rendle Myer
Roberta S. Pennington
Geraldine Rothgeb
Mrs. James J. Waring

Contributions of cash, goods, or services have been received from the following friends:

Peggy Altvater
John Clark Coe
Civic Garden Club of Denver
Design Engineering Division
Friends of Colorado Library for the Blind and Physically Handicapped
Dorothy R. Kaye
L.B.T Turf Nursery, Brighton
Ray Parker
Perennial Garden Club
P.E.O., Chapter CM
Ora H. Rostad
Van Ness Water Gardens of Upland, CA

Florissant Field Trip

Members are invited to join the Colorado Native Plant Society on a working and collecting field trip to the Florissant Fossil Beds National Monument. This is a chance to collect, press and key plant specimens for the herbarium at the Monument. Meet at 9 AM at the Monument Headquarters (35 miles west of Colorado Springs on Highway 24 at the town of Florissant) on July 10. There are motels and camp grounds in the area for those wishing to stay overnight. Call Mary Edwards (233-8133) or Miriam Denham (442-1020) by July 7 for more details or to register.

KCFR Concerts on July 7 and 21. Please see June newsletter for information about artists and how to receive tickets.

Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2548

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TIME VALUE

July 1982

Address correction requested

Green Thumb Newsletter



Number 82-8

August 1982



Workshop - Horticultural Therapy and the Physically Disabled

Guest Speaker - Mr. Ed Davies, Coordinator of Volunteer Training and Placement,

The Society for Horticultural Therapy and Rural Training, Ltd.,

Frome, Somerset, England

The Society for Horticultural Therapy and Rural Training, Ltd., was established in England in April 1978. Today it provides consultation and advisory services for establishing and carrying out horticultural therapy programs for the disabled, mentally ill and all types of rehabilitation programs in Great Britain and abroad. The Society also publishes **Growth Point** magazine as a communication link between the organization and all people interested in the field of horticultural therapy. Mr. Davies has been a member of the Society's staff since 1980 and currently coordinates their volunteer training and placement program. During the workshop he will speak both on the broad topic of horticultural therapy in Great Britain and specifically on horticultural therapy and the physically disabled.

The workshop will be held in Classrooms B and C in the Education Building and is open to the public. Further details and registration material can be obtained by contacting Ms. Julia Beems, Horticultural Therapy Intern, Denver Botanic Gardens.

Tuesday, August 24, 1982; Classrooms B and C, 8:30 a.m. to 4:00 p.m., \$15.00 for members, \$20.00 for nonmembers includes coffee and lunch.

Gardening Tips For August

This is probably not the time of year when you think about winter but as far as woody plants in your yard are concerned, the gardener needs to think ahead in getting plants prepared for the cool season.

By now most woody plants have developed well-formed buds. Under natural conditions, they are already beginning the hardening off process. This is sort of like "getting the antifreeze ready".

In the home landscape, however, continued watering, fertilizing and other cultural practices can cause some plants to continue soft growth, ignoring natural signals that start the hardening off process.

While trees such as lindens and oaks will continue to harden off regardless of moisture and fertility practices, others will continue to put out flushes of growth as long as weather conditions are favorable. Included in this group are green ash, silver maple, golden raintree, Siberian elm and callery pear.

You can help your plants to harden off by gradually reducing watering and withholding fertilizer. This does not mean that you stop watering completely, nor does it mean that you withhold fertilizer from a plant which obviously needs it. Deep watering but at infrequent intervals will be much better for the plants than several shallow waterings.

If you do fertilize, it is better to avoid types that are high in nitrogen. Nitrogen can stimulate excessive growth late in the season. It is also best to avoid heavy pruning.

Severe pruning practices can stimulate latent shoots which will not be properly hardened off by winter. This is particularly important with sheared evergreens and hedges.

If your perennial border is getting crowded, now is a good time to divide them. Dividing now will give them a chance to develop and establish root systems before winter. With iris, an easy way to keep the varieties separate is to write the name of the variety directly on one of the leaves of the plant, near the base, using a laundry marking pen. Cut the leaf blades off about one-half way up, dig and sort the iris, removing rotten rhizomes and the older ones which have already produced bloom. Replant immediately with the rhizomes just partially covered by soil and water in thoroughly.

Shasta daisies and similar perennials that spread by off-sets are best divided by digging the entire clump, saving the off-sets on the outer edge and disposing of the center portion.

If the plants that you are dividing cannot be replanted immediately, store them in a pail of water in a cool, shady location. Do not leave them in the water more than two or three days.

This is the time of year when pesticides of all types are in high use because of insect, disease and weed control problems. Gardeners are reminded to think carefully before using a pesticide. Make sure it is warranted and above all, read the label. Failure to follow label directions has resulted in unfortunate injury and even death.

In recent years a dangerous practice has surfaced among some gardeners, including garden clubs. That is the purchase of a quantity of some chemical which is then repackaged for members or neighbors. While this may be cost saving, it is extremely hazardous.

Pesticides purchased in bulk should never be repackaged, even if the new package is labeled with the product name. Along with the name on a proper label, are additional instructions and safety measures. Without this additional information it is too easy to confuse it with something else.

I've seen cases, for instance, where 2,4-D weed killer has been poured into a coke bottle and given to a neighbor. It appears almost identical in color to coke but would be deadly to anyone ingesting it.

Pesticides are valuable tools in gardening but they can be misused, sometimes with dire results.

Dr J. R. Feucht

Correction

Some printing errors in Janet Wingate's article *A Guide to the Common Wildflower Families of Colorado* in the Summer 1982 *Green Thumb* magazine may have been confusing to you who attempted to use the guide. The upper and lower illustrations on both pages 48 and 49 were reversed. They should appear as follows:

PETALS SEPARATE, OVARY SUPERIOR, FLOWER IRREGULAR



PETALS FUSED, OVARY SUPERIOR, FLOWER REGULAR



PETALS FUSED, OVARY SUPERIOR, FLOWER IRREGULAR



PETALS FUSED, OVARY INFERIOR, FLOWER IRREGULAR



The corrected article will be reprinted in *The Green Thumb*.

Mushroom Fair

The seventh annual Colorado Mushroom Fair will be held by the Colorado Mycological Society on Sunday, August 22 from 11 a.m. to 4:45 p.m. in the main lecture hall of the Denver Botanic Gardens.

To help the public gain a better understanding of mushrooms and other fungi, the fair will include exhibits on identification, cultivation, toxicology and preparation of edible mushrooms, as well as photographic and arts and crafts displays.

Knowledgeable CMS members will be on hand to answer questions and identify specimens brought in by the public. Entry to the fair will be free after gaining admission to the Gardens. For further information call: Rob Lehman 361-8028 (day) or 321-2569 (evening).

Wild Mushrooms

The Colorado Mycological Society invites all interested to join them on August 9 at 7:30 p.m. in the amphitheatre. Bring mushrooms to be identified. Plan on staying at 8:30 p.m. when Gary Lincoff will talk on "City Mushrooms". Mr. Lincoff is the author of *The Audubon Society Field Guide to North American Mushrooms* and co-author with Dr. Mitchel of *Toxic and Hallucinogenic Mushroom Poisoning*. There is no charge for this event.

The Lower Court Yard

A hot spot, with a cool look—that is the lower court yard to the right of the main gate of the Denver Botanic Gardens. The cement court yard not only creates a heat pocket, but the south wall of the Boettcher Memorial Center reflects additional sunrays, making a difficult growing area even more challenging.

The pale green leafy branches of six goldenrain trees, *Koelreuteria paniculata*, produce a lightly diffused shade that adds soft charm and a cooling atmosphere to its environs. As you walk past the court yard on the central walkway you will find yourself at tree branch level and in August the first of the small yellow blossoms will be opening on these fascinating trees. One of the main attractions of these small, 20'-25' trees is that they produce a profusion of flowers in large loose panicles, when most other trees and shrubs have lost their bloom. "Japanese lantern tree" is another name for these specimens, because the flowers are followed by persistent pod-like fruits in the shape of lanterns. By early fall these lanterns have dried from orange to a rust-brown color and can be clipped to use in fall arrangements.

These trees, native to China, Korea, and Japan, are well adapted to a wide range of soils, and drought-resistant, making them an attractive addition to our high plains tree-scape. Unfortunately many specimens bloom so late that they have not hardened off sufficiently before an early fall freeze and frequently freeze back in winter. Thus planting them in a heat pocket situation encourages earlier bloom and a safer entry into winter.

Mary Washburne

EVENING STROLL FOR MEMBERS ONLY ON AUGUST 17. CALL FOR FURTHER INFORMATION.



Summer in the Garden Concert Series

Get your tickets now for two more concerts in the DBG-KCFR co-sponsored series. On August 5 the Da Capo Chamber Ensemble will play and on August 25 enjoy the music of another fine group. All concerts are free but tickets are required. They may be picked up at our Gatehouse, or you may send a self-addressed stamped envelope three weeks prior to the concert to KCFR Radio, 2056 S. York St., Denver, CO 80208.

The Symphony Returns!

A benefit performance for and by the Denver Symphony Orchestra is to be held in the amphitheatre on August 3. Tickets will be \$5.00 per person. Come and bring your friends to what promises to be a lovely evening. Call 292-1580 for information.

Idea for A Program Chairman

Do you know that the Denver Symphony has special group discount rates? That is worth looking into! Call Tiena Fiske, 292-1580 for more information.

American Rock Garden Society Awards

We would like to congratulate the following friends of the Gardens who were honored at the ARGS annual convention held in Boulder last month.

Ruth Ashton Nelson received the Edgar T. Wherry Memorial Award for outstanding contributions and work on the flora of North America.

The Marcel Le Piniec Award was given to Dr. Paul T. Maslin for his work on the introduction of Phlox and other plants.

And to our Curator of the Rock Alpine garden Panayoti Callas, Award of Merit for outstanding service to the Society.

It is a pleasure to be associated with such worthy recipients.

N. B. Important Change of Address

Dr. J. R. Feucht may be reached at 15200 West 6th Ave. Golden, CO 80401. His new phone number is 277-8994.

Tributes

In memory of Mrs. Maude L. Ayers
Mrs. Irene L. Sutton

In memory of Lester G. Carpenter, Sr.
Mr. and Mrs. E. W. Peiker, Jr.

In memory of Mr. Stewart Cosgriff
Mrs. Frances P. Sargeant
Mrs. Charles S. Sterne

In memory of Martin Freeland
The Gary Andrew family
Mr. and Mrs. Mayne Parker

In memory of Ray F. Frey
Margaret M. Wilber

In memory of Mrs. Thelma Anderson Hofman
Mr. and Mrs. Richard Girouard

In memory of Mrs. Alonzo Lilly
Lorraine N. Higbie
Arthur and Helen Rippey

In memory of Joseph Rumsey, Jr.
Mrs. Kernan Weckbaugh

In memory of Mrs. Bayard K. Sweeney, Jr.
Helen Grant

In memory of Mrs. Edith Davis Whitaker
Peat, Marwick, Mitchell & Co.
Mrs. Frances P. Sargeant

In memory of Mrs. Mary E. Williams
Miss Agnes Mary Kinney
Miss Eloise R. Stroessner

In memory of Scott Wilmore
Denver Rose Society

Contributions of cash, goods, or services have been received from the following friends:

William A. Campbell, M.D.
Colorado Federation of Garden Clubs
Crestmoore Mile High Garden Club
D. Deane Hall, Jr.
Mr. Douglas Deane Hall
Helene Mueller
Park Hill Garden Club
Wheat Ridge Men's Garden Club
Dick Yamamoto
Tom Yamamoto

Around About the Gardens

Kentucky Bluegrass Elites

The 'A-34' Kentucky bluegrass (*Poa pratensis* L.) dividing the test annual gardens at the Denver Botanic Gardens is an improved bluegrass selected for its outstanding ratings in disease resistance, wear tolerance and overall quality.

The Problem

It was indeed evident that something needed to be done with the bluegrass paths which served as walkways between the various test annual beds. The grass was thin in spots and very quick to turn brown during periods of heat and water stress. In addition it was heavily infested with weeds such as thistle, plantain, and dandelion. In short, it was an eyesore. Thus, a number of high quality bluegrass cultivars were scrutinized in an effort to replace the sickly sod described.

Bluegrass Elites — A-34

'Adelphi,' 'Edmundi,' 'Touchdown,' and 'A-34' are examples of improved Kentucky bluegrasses possessing desirable turfgrass qualities. The 'A-34' was donated by LBT Turf Farms and was judged most appropriate for our project. In a five-year study conducted by eight universities 'A-34' received the highest rating of 43 bluegrass cultivars based on density and overall quality. It has displayed resistance to diseases such as stripe smut (*Ustilago striiformis*) and dollar spot (*Sclerotinia*.) Also, in a study at Michigan State University conducted by R. B. Anda and noted turfgrass expert James B. Beard, 'A-34' was the only bluegrass out of eighteen tested to receive an excellent rating in wear tolerance. This was of extreme importance to us as the bluegrass paths in the test annual area receive heavy foot traffic from the many thousands of visitors who visit our Gardens each year. In addition 'A-34' can tolerate a mowing height as low as ½" and does better in the shade than most other bluegrasses.

Credentials such as those listed have resulted in 'A-34' being a popular bluegrass selection for athletic fields such as Denver's own Mile High Stadium where it was installed in 1975. Where other grasses have failed, it has survived the onslaught of both the Denver Broncos and Denver Bears to provide a delightful playing surface.

Establishment and Maintenance of Bluegrass Lawns

Kentucky bluegrass will not perform well without proper soil preparation and management. Compacted and structureless soils should be broken up and improved by incorporating organic matter such as peat moss into the soil. Supplemental watering and fertilization are both needed for Colorado lawns. Infrequent deep watering is preferred with approximately 1½" - 2" needed per week during the hottest months. Published ET (evapotranspiration) rates are useful in gauging the amount of water needed. Three or four fertilizations during the growing season are suggested. Apply complete fertilizers such as 20-10-5 at the rate of 1 lb. of nitrogen per 1,000 sq. ft. Soil preparation, proper management, and the use of elite bluegrass varieties are the keys to healthy lawns in Colorado.

Joseph V. Tomocik
Staff



Art Show

The Denver Art Guild is having its Annual Art Show at the Botanic Gardens again this year from August 6 - August 15, 10 a.m. to 4 p.m. The reception will be August 8 (Sunday) 1 p.m. to 4 p.m. The show is a juried show for active members only. Judges are Dee Toscano and Gary Michaels. The Denver Art Guild is the oldest art club in Denver and has a reputation of having a group of highly professional painters that enjoy exhibiting their work. You will find a variety of subject matter and all different media, watercolor, oil, pastel, tempera, etc. Come and enjoy the Art Show as well as the beautiful gardens.

Botany Club, August 20, 7:30 p.m. The Herbarium

Please bring plants to identify.

Animals at the Gardens!

Mouse Birds from the Zoo will visit the Lobby Court for a few weeks in August. Come see them and note how plants tie into the animal theme. We may display shrimp plant, bird of paradise, or tape worm plant. Read the *Jolly Green Gardener* and see how many examples you can find.

Wheat Ridge Docent Program Needs:

Volunteers for historic sod house presentations and assistance to Histroical Society. Public relations, training and incentives provided. Contact Wheat Ridge Park Rangers 423-2626 or 237-6944, ext. 277.



THE JOLLY GREEN GARDENER

Photography by: S.E. Praetz



1 Small donkey's hind part



2 Horse-like with black & white stripes



3 Bear-like animal native to China

Plants With Animal Names

See if you can guess the names of these plants with the clues provided.

Answers on the back.



4 Headdress of an adult male deer



5 Small edible shellfish



6 Rhymes with box; covering for the hand



7 A reptile without legs



8 Sly dog-like animal

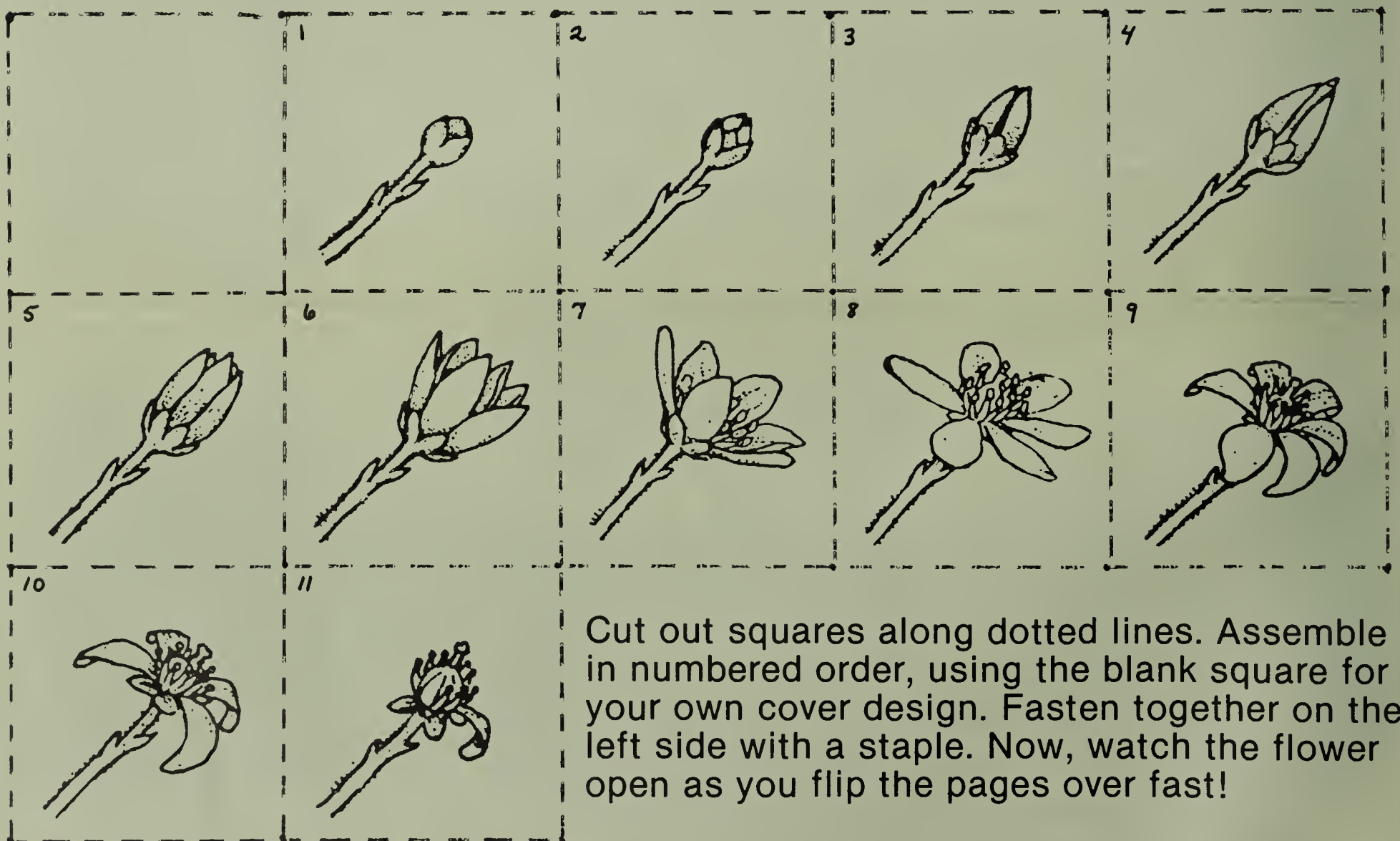
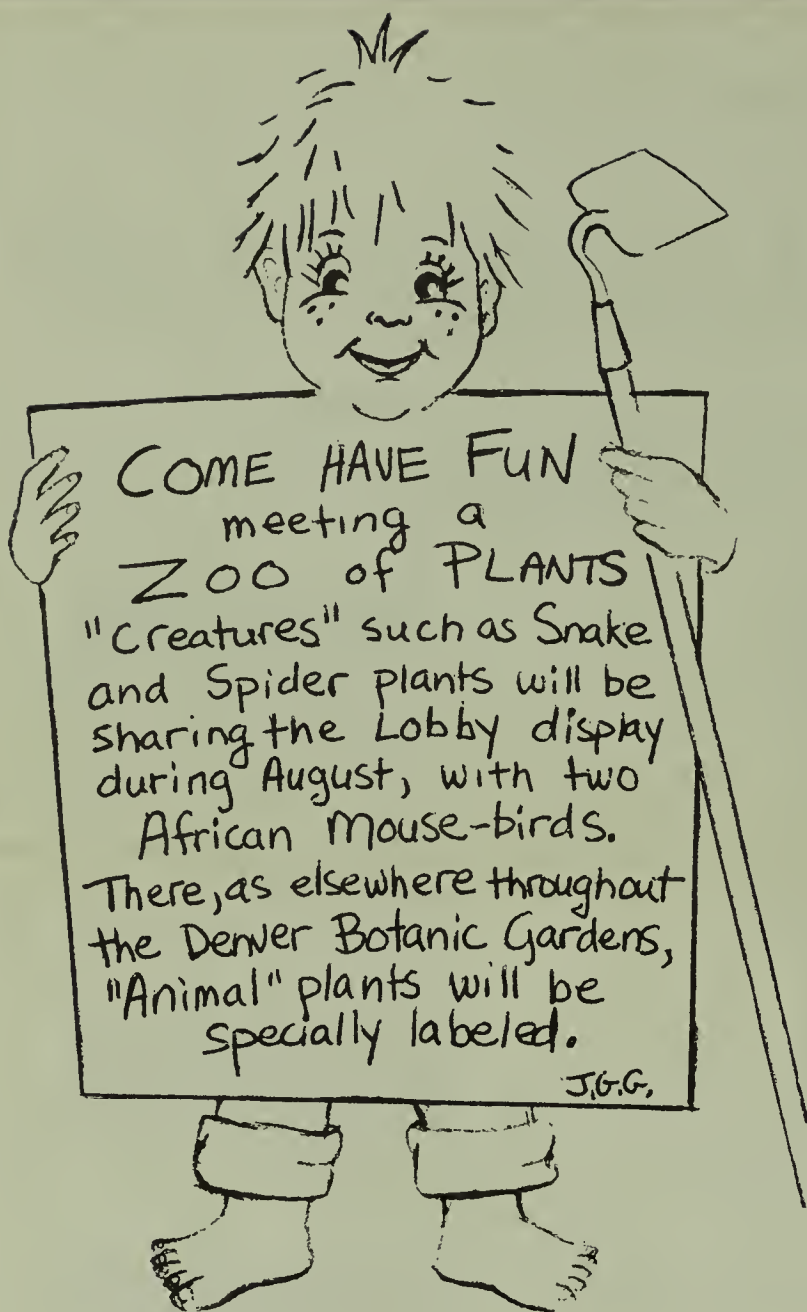


9 Hearing organ of a large grey animal

Bull's Horn Acacia

This small tree from Central America, gets its name from the horn like shape of its sharp thorns. Colonies of special ants live inside the thorns, busily protecting the tree from leaf-eating enemies or other plants that would shade it or compete for minerals in the soil. Also, by destroying most everything around the acacia, the ants create a natural protection from brush fires. In return, the tree provides the ants with safe homes and plenty of food. At the tips of the leaves, are tiny yellow "fruits" called Beltian (BELLshun) bodies. The ants gather these "fruits" to feed larvae (baby ants) nested inside the hollowed thorns. The ants also feed at the trees' **nectaries**, which look like little craters filled with sweet liquid. Nectaries grow near the base of each leaf. What an amazing partnership between plants and ants!

The Bull's horn Acacia can be found near the cacti at the West end of the Conservatory.



Cut out squares along dotted lines. Assemble in numbered order, using the blank square for your own cover design. Fasten together on the left side with a staple. Now, watch the flower open as you flip the pages over fast!

Calendar of Events



August 1982

3)*	9:30 a.m.	Education Building—Classroom A	Parks & Recreation Dept.
3)*	9:30 a.m.	Education Building—Classroom B	“Flower Arranging” - Avalonne Kosanke
3)*	7:00 p.m.	Education Building—Classroom A	“Small Space Gardening”-John Brett, Elise Huggins
3)	7:30 p.m.	Education Building—Amphitheater	Denver Symphony Orchestra Concert
3)*	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
5)	9:00 a.m.	Education Building—Classroom c	“Growing Vines” - Susan Praetz
5)*	7:00 p.m.	Education Building—Classroom A	“Small Space Gardening” - John Brett, Elise Huggins
5)	7:00 p.m.	Education Building—Amphitheater	KCFR Radio Concert - Da Capo Chamber Ensemble
6)	10:00-4:00	Education Building—Mitchell Hall	Denver Artists Guild SHOW & SALE
(This exhibit will continue each day through August 15th - 10:00-4:00)			
7)*	9:00 a.m.	Education Building—Classroom A	“Small Space Gardening”-John Brett, Elise Huggins
7)	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
7)	11:00 a.m.	Japanese Garden—Tea House	Japanese Tea Ceremony - Kim Thrasher
8)	1:00-4:00	Education Building—Mitchell Hall	Reception - Denver Artists Guild
9)	8:00 p.m.	Education Building—Amphitheater	Colorado Mycological Society, Lecture
10)	9:30 a.m.	Education Building—Classroom B	“Flower Arranging” - Avalonne Kosanke
12)	7:30 p.m.	DBG House—Main Room	Denver Rose Society
13)*	7:00 p.m.	Education Building—Classroom B	Judging School-Rky. Mt. African Violet Council
13)	7:30 p.m.	DBG House—Main Room	Denver Dahlia Society
14)*	9:00-4:00	Education Building—Classroom A	Judging School-African Violet Council
15)*	9:00-1:00	Education Building—Classroom A	Judging School-African Violet Council
17)*	9:30 a.m.	Education Building—Classroom A	Parks & Recreation Dept.
17)*	9:30 a.m.	Education Building—Classroom B	“Flower Arranging”-Avalonne Kosanke
17)*	6:15 p.m.	Education Building—Outside Grounds	“Summer Stroll” - Members Only
17)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
19)*	4:00-7:00	Education Building—Mitchell Hall	Hospice of Metro Denver
20)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
20)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
22)	11:00-4:45	Education Building—Mitchell Hall	MUSHROOM FAIR-Colorado Mycological Society
25)*	9:30 a.m.	Education Building—Classroom A	“Seed Collecting & Dispersal”-Mr. Pierce
25)*	12:00 noon	DBG House—Main Room	Colorado Garden Show, Inc.
26)*	7:30 p.m.	DBG House—Main Room	Men’s Garden Club of Denver
27)*	9:00 a.m.	Education Building—Mitchell Hall	Ikebana International
27)*	7:00 p.m.	Education Building—Amphitheater	KCFR Radio Chamber Music Concert
28)	10:00-4:00	Education Building—Mitchell Hall	Community Gardens Exhibition
29)	10:00-4:00	Education Building—Mitchell Hall	Community Gardens Exhibition

September 1982

2)*	1:00 p.m.	DBG House—Main Room	Central District Presidents Council
2)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
3)*	11:00 a.m.	DBG House—Main Room	Civic Garden Club
4)		Education Building—Mitchell Hall	Denver Rose Society SHOW
4)*	9:30 a.m.	Education Building—Classroom B	Gloxinia Gesneriad Growers
4)	11:00 a.m.	Japanese Garden—Tea House	Japanese Tea Ceremony - Kim Thrasher

* Members or enrollees only

Denver Settings

A fund-raiser on September 14 and 15, sponsored by the Garden Club of Denver, will feature eleven tables, each set in a different motif, reflecting and expressing various lifestyles of Denver. Tickets will be \$5 per person; the display will be at 1005 York; and all proceeds are earmarked for the Home Demonstration Garden at the Denver Botanic Gardens. More information in the next newsletter but save the date.

Annual Report Request

If you wish to receive a copy of the 1982 Annual Report when it becomes available in 1983, please clip and return:

Mr. Merle Moore, Director
Denver Botanic Gardens
909 York Street
Denver, CO 80206

I wish to receive a copy of the 1982 Annual Report.

Please print

Name _____

Street Address _____

City and State _____ Zip _____

Telephone number _____

REQUEST MUST BE RETURNED BY SEPTEMBER 30, 1982.

We will not keep a file of members requesting Annual Reports after they have been mailed each year. Members will be asked to request a copy annually.

Vegetables on Parade in the Hall

Saturday and Sunday, August 28 and 29 will be the annual Community Gardens Harvest Festival. Come see the biggest and the best from our Community Gardens. Included will be selections of unusual vegetables not usually grown in Denver gardens; artichokes, leeks, root parsley, French eggplant and others. For some fun and humor don't miss the vegetable people display; vegetables put together into fanciful and sometimes far out folk. Scattered throughout will be arrangements of the flowers of the season to complement the vegetables of the season.

Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2548

Classes

The *Small Space Gardening* class in the first week of August is full.

Join us on August 5 when *Vines* will be our topic. After the class presentation your instructor will show you some of the ways the Gardens are using these versatile plants. Meet at 9 a.m. in Classroom C. The cost is \$3 for members and \$6 for nonmembers.

Both the *Rollins Pass* and *Chatfield* field trips are full. Please read your schedule of classes for meeting places and directions on getting there.

“Flours worthy of Paradise which not nice art
In Beds and curious Knots, but Nature boon
Poured forth profuse on Hill and Dale and Plaine”

Come along on August 18 and see “Nature's boon.” Meet at 9 a.m. at the parking lot of the House, 909 York. Bring lunch. Free but share gasoline expenses with the driver.

More Classes!

Two classes listed in the *Fall Schedule* will be taught in August. Sign up now for a Tree Walk at South High School on August 30. We will meet at 8 a.m. at DBG or at 8:30 a.m. at the High School parking lot. The fee is \$3 for members \$6 for nonmembers. And back by popular demand “Herbs in your Backyard”, August 31, 9 a.m. \$4 for members and \$7 for nonmembers.

Tea House Open

Kim Thrasher will be available on August 7 at 11 a.m. to explain some of the features of the tea house to those interested.

278 New Members in June

A hearty welcome to all of you. We are delighted to have you as members and hope you will enjoy your association with us. Special thanks to the 220 people who renewed their memberships.

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TIME VALUE



August 1982

Address correction requested

Green Thumb Newsletter



Number 82-9

September 1982



Merle Moore, director, presenting "Certificate of Excellence" award from Strathmore Paper Co. to Koichi Kawana, Japanese Garden architect (June 1982).

Congratulations to

Merle Moore, our Director, presents a Graphics Gallery Certificate of Excellence to Koichi Kawana, designer of Shofu-en. In this manner the Strathmore Paper Company is pleased to recognize the outstanding coordination of design elements exemplified in the stationery held in Professor Kawana's hand. These note cards, which are printed by Rowley and Company, are available in the Gift Shop now.

Matching Gifts

Many Garden Members increase the value of their contribution to the Gardens through corporate Employee Matching Gift Programs. Employees of several companies including Beatrice Foods, Citibank of New York, United Bank of Denver, Exxon Corporation, Samuel Gary Oil Producer, Union Pacific Corporation, American Express Foundation, Equitable Life Assurance Society, Petro Lewis and Atlantic Richfield Foundation doubled their contributions through employers' programs. To determine if your company provides matching gifts, inquire in your personnel or public affairs departments.

Annual Rose Show

The Denver Rose Society will present the Annual Rose Show on Saturday, September 4, 1982. Exhibitors may bring their entries through the North Entrance to the Gardens between 7 a.m. and 9:30 a.m. Judging will be done at 10 a.m. The Rose Show will be open to the public from 1 p.m. until 4:45 p.m. The Show will be held in John C. Mitchell Hall. There is no entry fee.

For Members Only

A special event, for members only, is planned on September 19 from 1 to 4 p.m. The greenhouses will be open for your viewing and gardeners will be stationed in their particular area to explain the special features. Please come in by way of the back gate at 11th and Gaylord.

Denver Settings

Eleven tables, each set in a different motif, reflecting and expressing the various lifestyles of Denver, will be displayed on September 14 and 15 from 11 to 4:45 p.m. in John C. Mitchell Hall. The Garden Club of Denver has chosen the following themes: lunch in Washington Park, a penthouse supper in Larimer Square, breakfast in bed at the Fairmont, terrace lunch at Castle Pines, a child's birthday party, Arapahoe Hunt breakfast, a formal dinner on a Symphony night, a very special picnic, dinner in a Cherry Hills garden, luncheon at the Oxford Hotel, and southwestern buffet supper.

Tickets will be \$5.00 per person; Sponsor Party tickets will be \$20.00. These will be available at the Denver Botanic Gardens Gift Shop, and The Lark Gift Shop, 1215 E. 4th Avenue. Advance purchase will include Botanic Gardens gate admission. For further information concerning tickets please call Joanne Sinclair, 688-4720.

Pottery Show and Sale

The Colorado Potters will hold their seventh fall benefit show and sale this year on October 1 and 2 at Botanic Gardens.

John C. Mitchell Hall is a handsome setting for the many varieties of pots designed especially for plants and flowers. The greenhouse crew provides plants and flowers which beautifully complement the pots and the combination results in one of the most attractive shows held in the Hall.

The two day exhibition and sale is open Friday, October 1, from 9 a.m. to 4:30 p.m. and on Saturday, October 2, from 9 a.m. to 4:30 p.m.

KFCR-DGB Concert Series

There is one more opportunity this year to participate in the very popular concert series co-sponsored by KFCR and DGB. Join the group on September 16. The gate opens at 6 p.m. and the concert will start at 6:30 (note hour). For further information, call 753-2691.

Help Please!

The Associates of DBG are looking for a treasurer's assistant with accounting experience to handle posting and balancing of accounts, bill paying and preparation of quarterly reports for its executive board. This is a *volunteer* position and could be job-shared. Please contact Carrie McLaughlin, 321-4798, for more information.

Classes

Many different classes are planned for the month of September, so we hope every member will find something of interest.

Interested in rock garden plants? Study some of the *Families in the Rock Garden* on September 8 at 9 a.m. in the Alpine House. The cost is \$3 for members and \$6 for non-members. Limit 15.

Want to learn about *Tropical Plants*? Sign up for our 6-week class, every Wednesday, September 8 - October 13, from 1 to 3 p.m. in Classroom C and the Conservatory. The cost is \$25 for members and \$40 for non-members.

An opportunity to go birding with an expert will be provided on September 10 in *Birds of Chatfield*. Meet in Arboretum Visitors Center at 7:30 a.m. Bring your binoculars and a lunch. \$3 for members and \$6 for non-members.

Another chance to see fall migrants plus beautiful flowers will be on September 11 on a *Field Trip to Castlewood Canyon State Park*. Meet at 10 a.m. ½ mile west of Franktown on State 86 on the west side of Cherry Creek. \$3 for members and \$6 for non-members.

The Denver Water Board will be our hosts on September 14th. We will meet at 7:30 a.m. sharp at 6100 W. Quincy, the Marston Treatment Plant, where we will have a short briefing and tour. Then we will board a chartered bus for the mountain portion of the tour via the construction site of the Foothills Treatment Plant. A box lunch and soft drink will be served at Cheesman Dam. Since we will be walking around various facilities, people should wear comfortable shoes (closed toe shoes, please, no sandals, clogs or high heels) and carry a sweater or jacket. We will return to Marston around 4 p.m. There is no charge but we must guarantee 36 people. Call and sign up by September 1st please, and then *Please Show Up On the 14th*. If for some reason you find you cannot come, get someone to take your place! The Water Board expects 36 firm commitments.

Our last Wednesday *field trip* for the season will be September 15. Meet at 9 a.m. at the parking lot of the House, 909 York. Bring lunch, share gasoline expenses with the driver. Free, no limit.

Interested in Oriental art? Take our *Basic Bonsai* class and create a living treasure. Come from 7:30 - 10 p.m., on September 16, 23 and 30, Classroom B. The cost of \$35 for members and \$50 for non-members covers all materials.

A fun class which we hope children will especially enjoy is *Stream Ecology*, September 18. First we will meet in Classroom C at 9 a.m. and after a brief slide show and discussion, we will go to Cherry Creek. Wear old clothes, boots or sneakers, and bring a net and a glass jar with lid. This is not appropriate for children younger than 9, so please indicate the children's ages when you sign up. The cost is \$6 per person for members, \$10 per person non-members.

Botanic Drawing is back by popular demand. Meet at 9:30 a.m., in Classroom B on September 22 and spend the next 5 Wednesday mornings with us. The cost of \$35 for members and \$50 for non-members covers all materials.

Another class for parents and children is *Environmental Awareness for Pre-Schoolers* for 6 Saturday mornings starting on September 25, 10 to 11:30 a.m., Classroom B. This is planned for children ages 4 - 6 and one or two parents. The cost is \$30 per family.

All learn when Al Rollinger and Larry Watson teach *Plant Materials in Landscaping*. This course is primarily planned for professionals but advanced amateurs can certainly benefit from it. It begins on September 30 at 7:30 p.m. in Classroom C and continues through November 18. The fee is \$95 and the maximum enrollment accepted will be 50 students.

Tributes

In honor of Mrs. Anna Buie

Mr. & Mrs. J. C. deGraffenried

In memory of Allen R. Clark

Mr. & Mrs. Theodore A. Boerstler

In memory of Leilá Accola Cuthbert

Mr. & Mrs. Robert C. Accola

In memory of Nancy Winkler Giacomini

Blodwin Sulzbach

In memory of Mrs. Alonzo Lilly

Mr. & Mrs. Charles C. Gates

Mrs. Claude M. Maer, Jr.

In memory of Hazel Neff

Catherine Wardona

In memory of Blanche Summers

Civic Garden Club of Denver

In memory of Mrs. Bayard K. Sweeney, Jr.

Mr. & Mrs. Charles C. Gates

In memory of Mrs. Edith Davis Whitaker

Garden Club of Denver

Mr. & Mrs. Harold E. Tyler

Contributions of cash, goods, or services have been received from the following friends:

American Hemerocallis Society, Region 9

Mildred Baker

Mr. Rollin D. Barnard

The British Faire

Beth Crawford

Mr. Norman C. Deno

Gloxinia Gesneriad Growers

Dr. Koji Kanai

Mrs. Alice H. McWhinney

Men's Garden Club of Littleton

Michael B. Pulman

Roadposter

Ultra Violet Club



A one-room schoolhouse forms the backdrop as Newell M. Grant, center, vice president of the Board of Trustees of the Denver Botanic Gardens, and Andrew Pierce, assistant director of the Gardens, accept a \$25,000 check from Richard G. Adamson, vice president of business management for Martin Marietta Denver Aerospace. The grant will be used to develop a 350-acre arboretum in Denver's southwest foothills. The schoolhouse will be refurbished for use as a visitor center at the exhibit.



Several of the young people brought to the Gardens for summer-time work/training: in the back row, l-r, are Judy Imbergamo, Alison Winslow, Kevin O'Shea, Page Owen, Mary Conway and Sherri Rojec. In front are Rhoda Burrows, Peggy Brown, Marie Bernal, Jim McLean and Doris Romero. Other summer trainees, absent from this photo, are Julia Beems, Tom Manfred and Tracy Ryan.

Student Programs

Again this summer the Gardens is providing selected students with the opportunity to learn about horticulture and about the inner workings of botanical gardens while working along side our year-round professional staff members in programs of internship and seasonal employment. These programs have been expanding rapidly to better provide the twin benefits of educating botany and horticulture students and of augmenting the Gardens' labor force.

This year's appointments to our Internships in Applied Horticulture, a ten-week curriculum open to college students of the four-state Rocky Mountain region, are Peggy Brown, Metropolitan State University; Rhoda Burrows, Montana State University; Mary Conway, University of Northern Colorado; James McLean, Colorado State University; Kevin O'Shea, Regis College; Sheri Rojec, University of Colorado; and Alison Winslow, University of Denver. An increase from the four interns last year was made possibly by the continued underwriting by the DBG Associates of one regular intern and their additional endowment for an intern in connection with the Rose Garden; the Barbara Whealan Memorial Fund has also supported one of the internships for the Rock/Alpine Garden. The remaining four are sustained by the general operating funds until support can be obtained from specific donors interested in providing this valuable experience for college students—and the Gardens.

In addition, DBG also offers two longer term, six-month fellowships. Initiated this summer, the Horticulture Under Glass Internship, in which Judy Imbergamo of Metro State is working with the orchids in Marnie's Pavilion, is sponsored by Bill and Mickie Thurston of Weaselskin Farm. The Horticultural Therapy Internship is filled with the appointment of Julia Beems of Kansas State University, underwritten this year by the DBG Guild.

Two West High School students, Marie Bernal and Doris Romero, are working and learning at Denver Botanic Gardens under the second year's sponsorship of Mi Carrera, the youth program of Mi Casa Resource Center for Women; Page Owen, a botany major at Oberlin College, is employed by general operating

funds and gaining experience in the Japanese Garden; Tom Manfred, from Colorado State, is employed at Chatfield Arboretum; and Tracy Ryan is receiving training in the Conservatory, sponsored by Employability, Inc., a Denver Employment and Training Administration program.

Because of the proven value of these programs, both to the students and to Denver Botanic Gardens, their continuation and expansion is desirable, pending additional funding by friends of the Gardens wishing to share in their many rewards.

Care To Share?

Do you want to recycle your ornamental seeds, pods, cones and grasses?

Each year as part of the pre-holiday sale members of Around the Seasons Club sell dried natural plant materials. Wanted are: golden yarrow, money plant, Japanese lanterns, statice dumosa, bittersweet and other colorful seeds or blossoms that do not shrivel. Also welcome are such unusual cones as sugar pine, larch, Australian pine, Black Hills spruce and Coulter pine. Ornamental grasses must be picked early enough to avoid shatter. Unusual seed pods include: okra, cotton bole, ear pods, jacaranda, large acorns, trumpet vine, lipstick and even poppy seed heads. Please bring "gatherings" to Botanic Gardens House, 909 York Street or telephone 574-2548 for pickup. Profits derived from sale of this material benefit Denver Botanic Gardens. The club's current project is landscaping the grounds at the Chatfield schoolhouse in memory of Katherine Bruderlin Crisp.

170 New Members in July

A hearty welcome to all of you. We are delighted to have you as members and hope you will enjoy your association with us. Special thanks to the 246 people who renewed their memberships.

Annual Report

If you wish to receive a copy of the 1982 Annual Report when it becomes available in 1983, please clip and return the following coupon:

Mr. Merle Moore, Director, Denver Botanic Gardens.
I wish to receive a copy of The 1982 Annual Report.

REQUEST MUST BE RETURNED BY SEPTEMBER 30,
1982.

Please Print

Name _____

Street Address _____

City & State _____ Zip _____

Telephone Number _____

Around And About The Gardens

As summer wears on, floral displays fade and become a part of the past. Yet the ornamental grasses carry on—September is the time they come of age.

Unlike their turfgrass cousins, the ornamentals are encouraged to develop into full form, grandstanding their stately growth, textural contrast, and delicate inflorescences.

Perhaps the grass that has received the most attention in the last two years is the Blue Lyme Grass, *Elymus glaucus*. Its steel blue foliage as well as upright form has earned it three different positions in the Gardens: as background in the perennial border, as a divider on a hillside, and as a specimen in a planter.

Eulalia, *Miscanthus sinensis*, and its selected varieties has also been located in several permanent locations. The fine textured foliage and delicate feathery seed heads provide interesting contrast to the perennial border along with excellent drying material for the cutting garden.

Switchgrass, *Panicum virgatum*, a less versatile grass than the two mentioned, is nevertheless just as exciting. It is outstanding for color dynamics, most apparent when the flowers and seeds undergo ripening.

Two annual grasses used this year in the bedding displays are Fountaingrass, *Pennisetum villosum*, and Rubygrass, *Rhynchelytrum repens*. Both selections combine well with other annuals—part of the challenge in using them.

There are over 10,000 species of grasses. Surely, many of these are long neglected ornamentals. Each year we observe at least ten varieties and each year we question why we did not try them before...

Gayle Weinstein
Botanist-Horticulturist

September 1982

It's that time-of-year when frost may not be far away. We've been known to have a killing frost the first week in September but then there have been many times we've had "Indian summers" on into late October or early November. If only we could predict!

Generally, the first frost or two will nip the tenderest annuals such as marigolds and zinnias but with some good planning in your garden, perennials will provide some spots of color up until the very hardest frost or freeze. Even though now is not the time to plant them, it is a good time to think about them.

Among the best perennials are the chrysanthemums but not just any variety will do for Colorado. Even though they are relatively frost-hardy, to get the greatest enjoyment from the blossoms, considering our widely varying frost dates, it is wise to select those that flower the earliest. Fortunately, there are several very good varieties on the market that will fill the bill.

Several years ago the USDA tested a series called 'Masterpiece' at their station in Beltsville, Maryland. I had an occasion to observe these as well as plant them in my own garden to see how they would do here. Of about eight or nine varieties in this series, I found the ones that were most showy, dependable and early flowering included 'Pixie Cushion,' a yellow, button variety; 'Minautumn,' a reddish-bronze; 'Flaming Sun,' a reddish-orange and 'Baby Tears,' a very short-cushioned, white button and the earliest flowering of all. This one started flowering in mid-August.

I had my hopes built on 'Cloud 9,' an ivory, football-type mum, but it only made it through one season. Perhaps I should try it again.

This chrysanthemum series is now being propagated and marketed through garden centers along with the regular bedding plants. You can buy them already in bloom.

Another group of mum varieties that are quite trustworthy were developed at the Cheyenne Horticulture Station in Wyoming many years ago. Some are hard to find but a few of these are still around. 'Red Desert,' a burgundy red; 'San Saba,' a bright yellow and 'Aztec,' a reddish-bronze. All of these varieties flower in early September and maintain themselves as tight, cushion plants.

Another good, late perennial for the tall border is the False Dragon's Head, *Physostegia*. This plant is available in both pure white and lavender and produces flowers in neat rows on a tall, square stem. Flowers begin at the base of the spike and open towards the tip, providing a long flowering period. These are also favorites of those who do flower arrangements. This perennial tolerates a considerable amount of shade and propagates in dense mats, forming a good ground cover. Try it. You might like it.

Another good perennial that will add a spot of color here and there is the New England Aster. This plant has become naturalized along roadways across the midwest and up into the High Plains. It is usually a rather open and loose plant, adding an informal atmosphere to the garden. There are, of course, dwarf asters available when a more formal, compact form is desired.

Fall is a good time to get your lawn in condition and prepared for winter. Take advantage of the season as it gets cooler because this is the time when lawns develop a good density. Apply a 20-10-5 fertilizer, or similar analysis. It is usually safe to apply fall fertilization up to the middle of October. After that time it is probably best not to stimulate growth too much. If you apply fertilizer in the fall you shouldn't have to do it again until some time in mid-May the following year.

This is a good month to get your soil ready for planting your spring-flowering shrubs. More will be said about this next month.

Dr. J. R. Feucht

TEA HOUSE OPEN
SEPTEMBER 4 — 11 A.M.

**GENTLE ARCHITECTURE.** Malcolm Wells.

McGraw Hill, New York. 1981.

NA 2542.35 W

Malcolm Wells' **Gentle Architecture** was written at a time when it was fashionable to speak out against profligate waste in our built environment. The 1973 Arab oil embargo had Americans waiting at the gas pump and the Club of Rome publishing **The Limits to Growth** simultaneously. In the years following these events, however, everyone became aware of the interdependence of the nations of the world, including the Arabs. It is now clear that OPEC will continue to nurture the industrialized West's dependence on their oil by raising oil prices just enough to discourage the search for alternative energy by Western nations. And their plan is succeeding. Just recently, for example, Exxon announced its withdrawal from the massive oil shale project on Colorado's western slope because persistent low world oil prices do not justify continued investment. This contextual malaise is both the strength and weakness of **Gentle Architecture**. On the one hand, the book appears at a time when many readers will consider it irrelevant because the energy crisis appears to have vanished. For many other thoughtful readers, however, the book will serve as a timely reminder that we do indeed inhabit a finite planet with limited resources. One more oil shutoff should convince the rest of us.

Gentle Architecture is the work of a troubled soul. Wells is a prophet crying out against the way architects and engineers continue to squander needlessly scarce resources on the built environment. Like all prophets, Wells is a man ahead of his time, rather than of it. Although Wells' basic underlying questioning of our throwaway values is sound, specific recommendations are often questionable. Many practicing architects reject Wells' notion that burrowing our buildings underground is part of the answer to the energy crisis. Burrows are for rabbits, not people, and besides, they leak! Nevertheless, **Gentle Architecture** is recommended reading, particularly for architects and engineers. Wells rails against "us damned designers" throughout his book, and an occasional trip to the woodshed is healthful.

Richard Lightle

OF TREES, LEAVES, AND PONDS. Studies in Photo-Impressionism. Kenneth Kaufman.

E. P. Dutton. New York. 1981.

QH 45.5 K3846 1981.

This book, well designed and well printed, consists of 64 color photographs interspersed with quotes on beauty by Shakespeare, Shelley, Lord Byron, Wordsworth, and Plato. Documenting mostly the northeastern United States landscape in autumn, the author has separated the book into three loosely-organized chapters: trees,

leaves (and trees), and ponds (trees around water). Kaufman states in the introduction that his work is influenced by the great nineteenth-century impressionistic painters, such as Monet, Cezanne, Van Gogh, and Seurat—that is not evident in the photographs. Much better examples of photo-impressionism can be seen from Eliot Porter's photographs in **Down the Colorado**, John Wesley Powell, Promontory Press, New York, 1969, or **Intimate Landscapes**, Eliot Porter, E. P. Dutton, New York, 1979. Furthermore, Kaufman likens his photographs to notes in a musical score which compose a symphony; however it is my feeling that his notes (the photographs) fall short of the lyrics (the poetry). Still, this book may inspire the very amateur photographer.

R. I. Bruner

EVERGREENS. A GUIDE FOR LANDSCAPE, LAWN AND GARDEN. H. Peter Loewer

Walker and Company. New York. 1981.

SB 428 L74.

Horticulturist-author-artist, A. Peter Loewer uses a unique approach in recommending the use of small evergreens for today's gardens. This is realistic and sensible as so many of the newer gardens range in size from small balcony terraces on high-rise apartments to a few hundred square feet on a small city lot to, at most, an acre or two in the suburbs. The pattern of middle-class family life has contributed to the shrinking size of newer gardens. Families are smaller. Owners move more frequently—every five years is the average. Older gardeners often move to smaller homes as the physical effort of managing a larger plot becomes more taxing. All these trends argue for the smaller, self-contained, easily managed garden that will not outgrow the area. Mr. Loewer gives many choices and varieties of evergreens; "small" refers to the ultimate height of 12' and doubling in spread in 10 years; "dwarf" usually means a shrub or tree attaining a height of 3' at maturity or perhaps even smaller. Some of the plant material is not appropriate for our Colorado climate, especially the broadleaf evergreens. However, most can be used here. The author, a botanical artist, magazine writer and skillful horticulturist, has grown every plant he writes about. He has illustrated the book profusely and given directions for planting and cultivation that are clear and easily understood. The end of the book provides sources for evergreens one can buy through the mail, societies that might be good to join, and a fine bibliography. It would be fascinating to work out a landscape plan for a small area using his recommendations. One could hunt locally for most of the plant material and send away for those things which cannot be found here. Whether one is an avid armchair gardener or actually planning or re-planning a garden, this book is sure to be a useful resource.

Jane Silverstein Ries

KEEPING THE HARVEST. Home Storage of Fruits & Vegetables.

Garden Way Publishing. Charlotte, Vermont. 1980.
TX 612 V4 C5563.

This 203-page book covers almost every method of food preservation—canning, freezing, drying, jam and jelly-making, salt curing, and root cellar storage. Details are provided on how much to plant for the desired number of quarts or pints and on when to harvest garden vegetables. It is assumed, however, that fruit will be purchased for food preservation. **Keeping the Harvest** is designed for the beginner, although it is also a good resource for the veteran. Almost all of the processing procedures are up to date, utilizing information from the USDA Extension Service and the most recent research on canning procedures from the University of Minnesota. The book is well written and the drawings add much interest. Outlined, shaded areas scattered throughout the book highlight interest features, specific help, special recipes and high altitude adjustments. It would be wise to pay particular attention to these sections as high altitude problems are not discussed in length. Although the basic information on canning, freezing, and drying is thoroughly done, other books would offer a greater variety of recipes for making pickles, relishes, preserves, jams and jellies.

Jacquelen Anderson

THE MINIATURE PALMS OF JAPAN. Yoshihiro Okita and J. Leland Hollenberg.

John Weatherhill, Inc. New York. 1981.
SB 413 R44 0547.

The preface to **The Miniature Palms of Japan (MPJ)** cites a few similarities and differences between bonsai and **kansouchiku**, as the culture of dwarf Raphis palms is called. In my view the differences are far greater than the similarities, but if one finds the pruning, root-pruning, wiring, styling, repotting, and watchful care of bonsai somewhat formidable, then he might well consider the less demanding culture of kansochiku. Kansochiku has additional appeals. Since the plants are tropical or subtropical, they grow well indoors in northern climes either in the winter or the year around. They are evergreen, so they have a constant attractiveness. They are relatively pest free and disease resistant. There are bonsaiists, too, who will find this hobby to be a good supplementary involvement with plants. **The Miniature Palms of Japan** is a careful and loving translation of an introductory Japanese book on the cultivation of **kannonchiku** and **shurochiku**, the two major species of dwarf palms. Chapter 4 is a 25-page description of some 80 cultivars of these two species supported by 40 excellent color plates of some of the cultivars, potted and ready for exhibition in your living room. In addition to the general characteristics, history, and genealogy of kansochiku, the rest of the book deals in adequate detail with all

aspects of selecting, potting, propagating, exhibiting, and even marketing the plants. The second appendix to the book gives a four-page, semi-quantitative table of cultural information on 42 different cultivars—percent of shade, best growing temperatures, and the like. **The Miniature Palms of Japan** should fill an important void in English books on plant care.

Malcolm Correll

THE UNHEATED GREENHOUSE. Ronald H. Menage.

Thornsons Publishers Ltd., Wellingborough,
Northamptonshire. 1979.
SB 415 M 453.

The Unheated Greenhouse, devoted to efficient greenhouse structure and horticultural techniques, provides a solid basis for the layman. Menage presents general approaches to design and construction of somewhat unsophisticated structures, oriented and glazed for efficient collection of solar energy in the form of heat. Concentrating on efficiency, the author discusses these factors sufficiently: efficient solar energy collection and distribution, sufficient solar collection storage, heat loss reduction during and following collection, and available materials and applications to absorb and retain heat. The book fulfills the author's intention to familiarize the weekend do-it-yourselfer; however, I recommend that the more technically-oriented individual consult **The Complete Greenhouse Book**, Peter Clegg and Derry Watkins, or **The Passive Solar Energy Book**, Edward Mazria. My review of **The Unheated Greenhouse** does not consider one-half of the book's discussion on horticultural technique, an area which I do not feel qualified to comment on.

William A. Sieck

GARDEN FLOWERS. Brian & Valerie Proudley.

Blandford Press. Poole, Dorset. 1979.
SB 407 P768.

For the beginning gardener, this book is easy reading—well structured and full of interesting information. Chapters 1, 2, and 3 deal with planning and theory, soil and the actual work needed to grow lovely flowers, and plants and plant selection. The last chapter reviews gardening problems, especially pests. One hundred and sixty-seven color plates assist the gardener in visualizing and learning plant materials. **Garden Flowers** concludes with a glossary and index of plant names in both Latin and English. This useful book is recommended for beginners and for those who wish to have accessibility to a thoughtfully-prepared pictorial and verbal presentation of garden flowers.

Gladys Kirk

THE REVIEWERS

Richard Lightle—Past President of American Institute of Architects, South Chapter; Associate Architect with John James Wallace and Associates, Colorado Springs.

Ron I. Bruner—M.A. in sculpture and MFA in photography, from the University of Denver. Freelance photographer, published photographic essay titled "Land of the Windmills." Presently teaching photography at the University of Denver.

Jane Silverstein Reis—Landscape Architect, Denver. Fellow of American Society of Landscape Architects.

Jacquelen Anderson—Extension Agent-Home Economics, CSU Cooperative Extension Service, City and County of Denver.

Malcolm Correll—Secretary, Denver Bonsai Club; Professor-Emeritus of Physics, University of Colorado, Boulder.

William A. Sieck—Salesman, Residential Energy Systems, Inc., Denver; Specialist in passive solar greenhouses.

Gladys Kirk—Member, Denver Botanic Gardens.

Genevieve M. Kruzel—Editor.

Solange G. Gignac—Librarian.

Calendar of Events

September 1982

2)*	1:00 p.m.	DBG House—Main Room	Central District Presidents Council
2)	7:45 p.m.	Education Building—Mitchell Hall	Denver Orchid Society
3)*	11:00 a.m.	DBG House—Main Room	Civic Garden Club
3)*	5:30 p.m.	Education Building—Mitchell Hall	Korean Consulate Reception
4)*	8:00 a.m.	Education Building—Classroom B	Rose Society Show Judging
4)		Education Building—Mitchell Hall	Denver Rose Society SHOW OPEN TO PUBLIC 1-4:45 p.m.
4)	9:30 a.m.	Education Building—Classroom C	Gloxinia Gesneriad Growers
4)	11:00 a.m.	Japanese Garden—Tea House	Japanese Tea Ceremony—Kim Thrasher
6)		LABOR DAY—Offices Closed	
7)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Supervisors
7)*	1:00 p.m.	DBG House—Main Room	Faculty Wives of C.U. Health Sciences Center
7)*	6:00 p.m.	Education Building—Mitchell Hall	Junior League of Denver
7)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
8)*	9:00 a.m.	Education Building—Mitchell Hall	Junior League of Denver
8)	9:00 a.m.	DBG House—Main Room	DBG Guild
8)*	1:00 p.m.	Education Building—Classroom C	“Tropical Plants”—Peg Hayward
9)*	8:30 a.m.	DBG House—Main Room, Dining Room	DBG Guild Vinegar Bottling
9)*	11:00 a.m.	Education Building—Classroom B	Colorado Nurserymen’s Association
9)	7:30 p.m.	DBG House—Main Room, Dining Room	Denver Rose Society
10)*	8:00 a.m.	Education Building—Mitchell Hall, Classrooms B and C	ROMCOE
10)*	9:00 a.m.	Education Building—Classroom A	Denver Public Schools Ex-Intern Program
10)*	12:00 noon	Education Building—Classroom B	ASID—Community Affairs
10)*	12:00 noon	Education Building—Classroom A	Queen of Spades Garden Club
10)*	6:00 p.m.	Education Building—Amphitheater	Men’s Club for the Denver Symphony
10)	7:30 p.m.	DBG House—Main Room, Dining Room	Denver Dahlia Society
11)*	9:00-5:00	Education Building—Classroom B	ASID—Community Affairs
11)	10:00 a.m.	DBG House—Parking Lot	Men’s Garden Club of Denver PLANT SALE
11)		Education Building—Mitchell Hall	Denver Dahlia Society SHOW AND SALE
12)		Education Building—Mitchell Hall	Denver Dahlia Society SHOW AND SALE
14)		Education Building—Mitchell Hall	Garden Club of Denver “DENVER SETTINGS” OPEN TO PUBLIC 11:00 to 4:45
14)*	6:00 p.m.	Education Building—Classroom B	Colorado Home Economists in Business
14)	7:30 p.m.	Education Building—Classroom A	Colorado Cactus & Succulent Society
15)		Education Building—Mitchell Hall	Garden Club of Denver “DENVER SETTINGS” OPEN TO PUBLIC 11:00 to 4:45
15)*	1:00-5:00 p.m.	Education Building—Classroom A	U.S. Forest Service
	7:00-10:00		
15)*	1:00 p.m.	Education Building—Classroom C	“Tropical Plants”—Peg Hayward
15)	7:30 p.m.	Education Building—Classroom C	American Rock Garden Society
16)*	8:00 a.m.	Education Building—Classroom C	Parks & Recreation Dept. Supervisors
16)*	1:00 p.m.	Education Building—Classroom B	DU Women’s Library Association
16)*	1:00 p.m.	Education Building—Classroom C	U.S. Forest Service
16)	6:30 p.m.	Education Building—Amphitheater	KCFR Radio Concert
16)*	7:30 p.m.	Education Building—Classroom B	“Beginning Bonsai”—Jeppson and Sasaki
16)	7:30 p.m.	Education Building—Classroom A	Indoor Light Gardening Society
17)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
17)	7:30 p.m.	Education Building—Herbarium	Denver Botany Club
18)*	9:00 a.m.	Education Building—Classroom C	“Stream Ecology”—John Reber
18)*	9:30 a.m.	Education Building—Classroom B	Hi Country Judges Workshop
18)	10:30 a.m.	Education Building—Mitchell Hall	Colorado Native Plant Society
18)*	12:30 p.m.	DBG House—Main Room, Dining Room	Rocky Mountain African Violet Council
19)*	1:00 p.m.	DBG Greenhouses	“Open Greenhouses”—members only
20)*	6:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society Board Meeting
20)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
20)	7:30 p.m.	Education Building—Classroom C	Hi Country Bromeliad Society

Calendar of Events (Cont'd.)

21)*	9:30 a.m.	Education Building—Classroom B
21)	7:30 p.m.	Education Building—Classroom B
22)*	9:00 a.m.	Education Building—Classroom B
22)*	12:00 noon	DBG House—Main Room
22)*	1:00 p.m.	Education Building—Classroom C
22)*	5:30 p.m.	Education Building—Classroom A
23)*	8:00 a.m.	Education Building—Classroom C
23)*	8:00 a.m.	Education Building—Mitchell Hall
23)*	9:30 a.m.	Education Building—Classroom B
23)*	10:00 a.m.	Chatfield Arboretum Schoolhouse
23)*	7:00 p.m.	Education Building—Classroom B
23)*	7:30 p.m.	DBG House—Main Room, Dining Room
24)*	9:00 a.m.	Education Building—Mitchell Hall
25)*	9:30 a.m.	Education Building—Classroom B
27)	9:30 a.m.	DBG House—Main Room
29)*	9:00 a.m.	Education Building—Classroom B
29)*	9:30 a.m.	Education Building—Classroom A
29)*	1:00 p.m.	Education Building—Classroom C
30)*	7:00 p.m.	Education Building—Classroom B
30)*	7:30 p.m.	Education Building—Classroom C

October 1982

1)		Education Building—Mitchell Hall
1)*	9:30 a.m.	Education Building—Classroom C
1)*	9:30 a.m.	DBG House—Main Room, Dining Room
2)		Education Building—Mitchell Hall
2)	9:30 a.m.	Education Building—Classroom B
4)	9:30 a.m.	DBG House—Main Room
5)*	9:30 a.m.	Education Building—Classroom B
5)	7:30 p.m.	Education Building—Classroom B
6)*	7:30 a.m.	Education Building—Mitchell Hall
6)*	9:00 a.m.	Education Building—Classroom B
6)*	1:00 p.m.	Education Building—Classroom C

*Members or enrollees only.

Parks & Recreation Dept. Supervisors
 Denver Bonsai Club
 "Botanical Drawing"—Angela Overy
 Colorado Garden Show, Inc.
 "Tropical Plants"—Peg Hayward
 Women in Mining
 Parks & Recreation Dept. Supervisors
 International Society of Arboriculturists
 African Violet Society of Denver
 Around the Seasons Club
 "Beginning Bonsai"—Jeppson and Sasaki
 Men's Garden Club of Denver
 Ikebana International
 "Environmental Awareness for Preschoolers"—Heidi Fine
 Ultra Violet Club
 "Botanical Drawing"—Angela Overy
 "Seed Collecting and Dispersal"—Andrew Pierce
 "Tropical Plants"—Peg Hayward
 "Beginning Bonsai"—Jeppson and Sasaki
 "Landscaping for Professionals"—Rollinger and Watson

Colorado Potters Guild SHOW & SALE
 OPEN TO PUBLIC 9 - 4:30
 Potpourri Workshop
 Civic Garden Club
 Colorado Potters Guild SHOW & SALE
 OPEN TO PUBLIC 9 - 4:30
 Gloxinia Gesneriad Growers
 DBG Associates Board
 Parks & Recreation Dept. Supervisors
 Denver Bonsai Club
 Mile High United Way
 "Botanical Drawing"—Angela Overy
 "Tropical Plants"—Peg Hayward

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TIME VALUE

September 1982

Address correction requested

Green Thumb Newsletter



Number 82-10

October 1982

Travel Plans

Williamsburg Symposium 1983

During the period April 17-21, 1983, Williamsburg will sponsor its 37th Garden Symposium in association with the American Horticultural Society. Every year this gathering delights the people who attend and it is always sold out.

The Gardens Travel Committee have made reservations for a small group to attend and we will extend the time to include other private local gardens, features, etc. for a tour of 10 to 14 days. A member of the staff will accompany the tour. The program will cover many highlights including "Flower Arrangements at the White House," "Orchids for the Common Man" and "Natural Plants of Williamsburg and its Woodlands" to name a few. "How to" workshops on pruning, bricklaying, and maintenance are special features.

More information will appear in subsequent newsletters but this is an opportunity not to be missed so mark your calendar now!!

South Africa, September 1983

Plans are well in hand for the Denver Botanic Gardens 1983 international tour. Departure for 20 or so fortunate people will be mid September for three weeks.

Some highlights will be the incredible flora of South Africa and many of its greatest private gardens. You will have the chance to visit the famous Kruger Game Reserve, sit on the top of Table Mountain amongst more different heathers than anywhere in the world, visit wine country and go down in a gold mine.

More details later.

Botanic Art on Display

An art show of unusual variety and sensitivity to nature is the Regional Exhibition of Botanic Art, October 4 through 15, at the First of Denver Plaza, 621 17th Street.

Participating artists are Panayoti Callas, Carolyn Crawford, Doris Peacock, Laurel Pye and Jennifer Shoemaker.

Widely published Callas will exhibit his favorite subject, the alpine plants in pen and ink. Crawford, known for her wildflower portraits uses pastels to create her delicate and botanically correct images. Peacock will exhibit her pen and ink project on the Colorado conifers. Pye demonstrates her expertise with water-colors depicting the plains and montane wildflowers while Shoemaker excels in pen and ink illustrating the regional grasses and flora, some of which are fast becoming extinct.

Everyone who enjoys the special beauty of Colorado's nature will find something at the show to recall, identify, and enjoy.

October 27

Save the date and join your friends when the Associates have their annual get-together. At 10 a.m. Carrie McLaughlin, President of the Associates, will conduct a business meeting where everyone may hear what has been accomplished this year. At noon, lunch will be served and at 1 p.m. a speaker will entertain and inform us. Watch for your letter with further details and with the response form.



Pottery Show and Sale

The Colorado Potters will hold their Annual Show and Sale in the John C. Mitchell Hall on October 1 and 2 from 9 to 4:30 p.m. each day. Mrs. Clark Coe, chairman of this year's show, reports that over 500 pieces of functional stemware and porcelain-ware will be available and that many pieces have been especially designed for potted plants or flower arrangements.

All welcome to one of the most beautifully staged shows here at the Gardens.

Botany Club

The Botany Club will meet October 15 in Classroom C at 7:30 p.m. The program is "Picture Highlights of Six Years of Botanizing by an Eastern Transplant"—given by Al Daraghy, photographer. Free. Everyone welcome.

Classes

The October classes are full. Please refer to the *Fall Schedule* for dates, times, and where to meet.

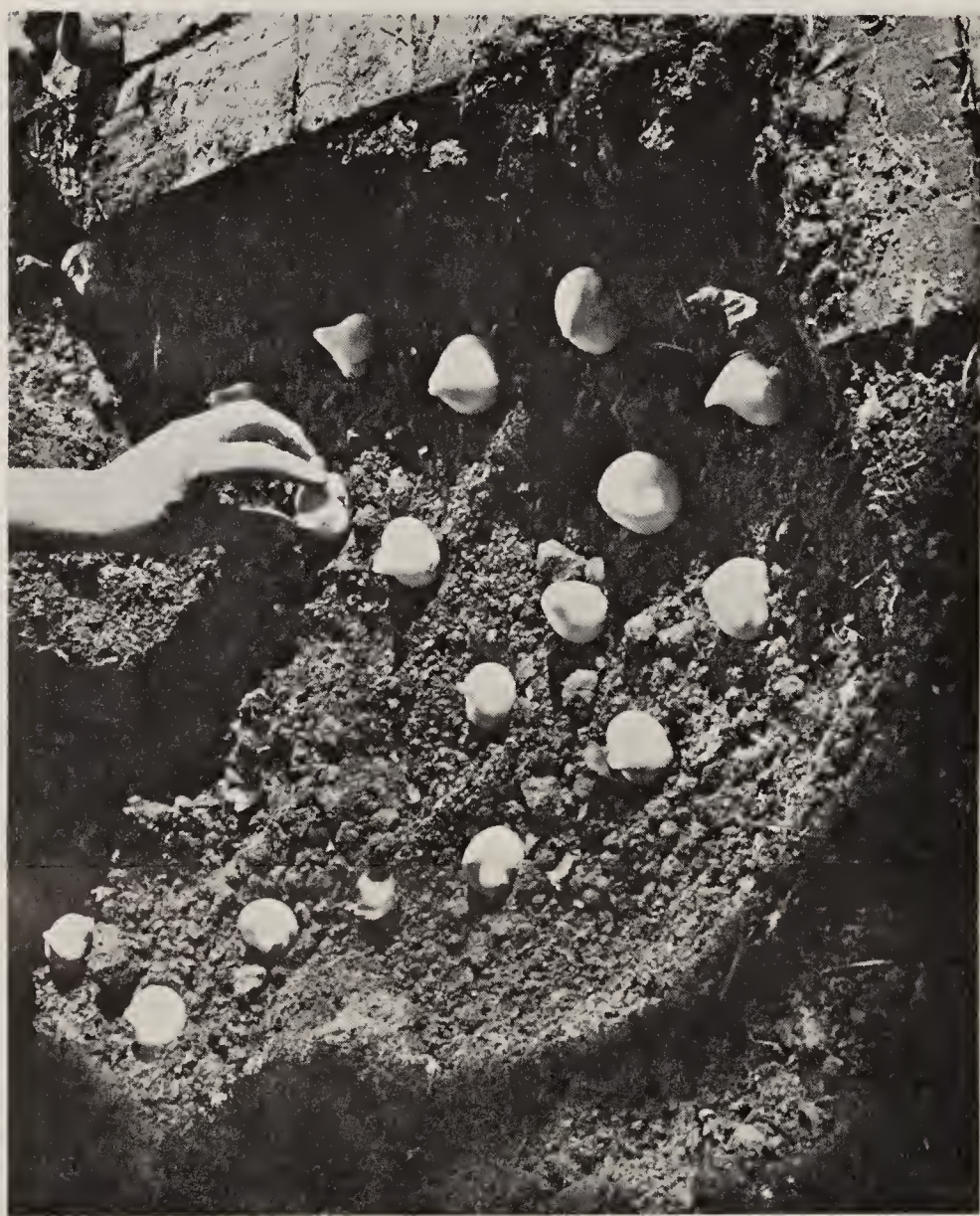
Gardening Tips for October

If you want a colorful array of spring-flowering bulbs, now is the time to plan as well as plant. It is important to shop for bulbs as soon as they are on the display shelves. Examine them carefully for mechanical damage and signs of discoloration which may be the cause of a fungus organism. I prefer selecting bulbs from bins rather than buying them already packaged in plastic bags. This way each one can be selected separately. The only danger is that the varieties can become mixed up. Usually, however, there are some differences in color, even among tulips, from one variety to the next.

Select the largest bulb of its type. It will generally contain good flowers. Low-quality bulbs may seem to be a bargain but they will be disappointing because they may not contain flower buds.

For the High Plains area, bulbs are generally planted 2" deeper than the recommended depth published in guide books. This is done to protect against frost heave and early emergence of the bulbs in spring.

Planting depth also depends on the type of soil you have. Bulbs do poorly in heavy clay soil. If you do plant in this type of soil, the bulbs must be more shallow or they tend to rot.



If you have trouble with bulbs emerging too early in spring it's either because they are in a warm exposure or they were not planted deeply enough. You can prevent this by applying a mulch of wood chips or other suitable material *AFTER* the ground has become thoroughly frozen. The mulch will help to insulate against an early thaw.

The question is often asked whether or not bulbs can be planted as late as December and January. The answer is yes, but it depends on whether or not the ground is frozen at the time of planting. It is generally not as satisfactory because a bulb normally needs to develop roots soon after planting to produce satisfactory growth as they emerge in spring.

The life cycle of a bulb is rather interesting. A hyacinth is a good example. In a sense, a spring-flowering bulb can be considered a drought-evading plant for it is in a rest period beneath the ground during the July-October period. When the soils are cooler and generally more moist starting in October, root development occurs. This root growth develops from stored food in the bulb and continues as long as soil temperatures are above freezing. Roots develop best at approximately 48°F.

Depending upon soil temperatures, the bulb continues to develop and part of the shoot elongates even during the winter months. As soils warm up in spring, elongation of the top continues until emergence occurs in the April to May period, depending on bulb type.

The flower is already well-formed in the bulb when you buy it. It is mostly an elongation process when it emerges in the spring. This is why a bulb of low quality will not flower. It has no flower in it to start with.

After the flowers die down, the foliage produces food to rebuild the old bulb and to make new bulbs. This is why it is important not to cut the foliage back too soon but to allow it to die back normally. When the foliage begins to die back on its own, it is a sign that the bulb is going into the rest period at which time, both the top and the roots cease to function. This usually occurs in the June-July period. It will be earlier for tulips and later for daffodils and some hyacinths.

If spring-flowering bulbs need to be lifted and divided, the best time is during the July-October rest period.

Dr. J. R. Feucht

Piano Concert “The Little Gold Dust Suite”

A concert of original piano compositions by John Jenkins will be held on October 17 at 8 p.m. in Friedhoff Hall on the School of Mines Campus in Golden. This performance will be coordinated with color slides of the wilderness area in Eagle County photographed by Stan Young. Tickets, which cost \$4 per person, are available at the Foothills Art Center, 809 15th St., Golden. 279-3922.

New Gesneriad Club Planned

There are a number of gesneriad growers in the Denver area who are not able to meet with our group on Saturday mornings (first Saturday of each month, 9:30 a.m., Botanic Gardens).

We are making plans to start a second club which will have its meetings in the evenings, probably at Botanic Gardens.

If you are interested in learning more about gesneriads, please contact one of us.

Isla Montgomery
921 Garfield
Denver, CO 80206
355-4991

Emma Lahr
3559 E. Easter Ave.
Littleton, CO 80122
771-5200



THE JOLLY GREEN GARDENER

Feel Your Highest Branches Swaying in the Wind

Enjoying and appreciating nature can depend on our ability to sense the existence, feelings and movements of other creatures and life-forms.

Creative movement is a wonderful and fun method to experience the many ways that plants move about.

Choose a flower, tree, seed... anything. Then, believe you really *are* that thing. Use your imagination and body together. Stretch and twist or be still and calm.


The more deeply you concentrate and put your whole being into pretending, the more you'll take on the character and understand the feelings.

Start with something simple: Be a dry, brittle leaf falling lightly through the autumn air, or a beautiful blossom slowly opening each petal, then fading away. Imagine the sensation of being a weed yanked out of the ground.

As you progress, you'll have fun with more complicated images—maybe the **life cycle** of a tree. Begin as a seed, sprouting up through the earth, growing big and healthy, then falling, rotting and blending back into the soil.



Try being a tree growing in the woods strong and tall. Your body is the trunk. Stand straight on one leg—it could be part of the roots. With the help of your hands, bend your other leg to rest on your inner thigh to make a twisted branch. Lift your arms over your head with your hands touching—they are the branches. With practice your balance will improve. Breathe freely. Relax. Enjoy!



Trick or Seeds!

Roasted pumpkin seeds are always a treat, though many other Halloween treats are also seeds! Sorting through your goodies you may find popcorn balls, peanuts, packets of sunflower seeds, or candies with coconut—and what about corn-nuts or chocolate. Chocolate?! Yes, chocolate is made from the seeds of a tropical evergreen tree.

Chocolate trees are grown on great plantations mainly in Brazil. The fruits are ribbed pods the size of large cantalopes. These pods grow right from the trunk on small stems. When ripe, a pod contains from twenty to forty almond shaped beans (seeds).

The beans must be dried in the hot sun then shipped to markets around the world. In chocolate factories, the beans are cleaned, roasted and ground into **cocoa**. Milk-chocolate is made by mixing the cocoa with milk and sugar.

The botanical name for the Chocolate Tree is *Theobroma*—which means “food of the gods”. You may see a young Chocolate Tree in the Conservatory along the North side.



Around and About the Gardens

While they last, bright colors are the most eye catching characteristics of a landscape. The vivid hues of spring and summer flowers are often extended by the bright, bold fruits of fall. Often times, these fruits ripen in late summer, clinging through fall and winter providing a display season after season.

Many plants are noted just for this. Japanese Barberry (*Berberis thunbergii*), Lantana Viburnum (*Viburnum lantana*) and Cranberry Cotoneaster (*Cotoneaster apiculata*) are a few such species. But there are others less well known that merit attention especially at this time of year.

Near the main entrance on the south side of the walk, the hybrid shrub rose, *Rosa laxa x rubrifolia*, is laden with oblong, brick red fruits. These 'hips' have been present for two months. On the same side of the pathway are the brighter red fruits of the Cutleaf Sumac, *Rhus typhina laciniata*.

Autumn is one of the best times for the hawthorns to boast of color. One that is exceptional now is the Russian species, *Crataegus ambigua*. Located in the northwest section of the gardens, these small trees are bearing masses of small, bright red apple-like fruits.

Other plants of interest at this time are the vines. *Clematis* species are displaying puffs of silky achenes while the *Ampelopsis* are exhibiting porcelain colored berries.

Russian Olive is not noted for its fall display; however, the special selection *Elaeagnus angustifolia orientalis* has striking russet color drupes that contrast nicely with the silvery foliage.

It is apparent that the fruits of many landscape plants are as attractive as the flowers, and in some cases, more so. There are thousands of plants that can be selected for this use. It would be an interesting alternative to plan a landscape design around the fruits of fall rather than the flowers of spring.

Gayle Weinstein
Botanist-Horticulturist



Wildflowers

Again this year a very special slide show will be presented in memory of a very special man. The Carl W. Tempel lecture featuring lovely wildflowers is scheduled on November 1 at 7 p.m. in John C. Mitchell Hall. Free and all welcome.

Glass Artists' Fellowship Show and Sale

OCTOBER 16 THROUGH 24, 9 TO 4:45 P.M. DAILY, JOHN C. MITCHELL HALL.

Ikebana Show

Denver's Chapter 66 of Ikebana International is sponsoring the third North American Regional Conference from October 12 through October 16, at the Brown Palace Hotel. This event will include a spectacular display of flower arrangements created by two flower masters from Japan and many Ikebana teachers from all over the U.S. and many other countries, as well.

The public is welcome to view the floral exhibits free of charge, at any time from 6 p.m., Wednesday, October 13, until the show closes at 6 p.m., Friday, October 15, in the Ballroom Promenade of the Brown Palace. There will also be a new exhibit of priceless oriental items at the Denver Art Museum—"Bamboo, Flowers and Tea: Selections from the Lutz Bamboo Collection."



Panayoti Callas, Curator DGB Alpine Garden, pointing out plants in Rock Garden to Members of ARGS during the ARGS Annual Meeting, July 1982.

Tributes

In memory of Mr. J. E. Barnette

Dr. and Mrs. Robert Kosanke

In memory of Sam Beck

Mr. and Mrs. Spier D. Whitaker

In memory of Mrs. Anna Reynolds Morse Garrey

Louisa Arps

Genevieve Kassler Brock

Mrs. Charla G. Cannon

Betty Funston, Drasilla Johnson, and Peggy and Joe Turner

Mrs. J. Ramsay Harris

Mrs. Elinor Kingery

Mr. and Mrs. Victor B. Jeter

Mrs. Baxter Lanius

Mr. Lawrence A. Long

Mr. and Mrs. George Luchetta, Joe and Geoffrey

Charles R. Maierhofer

Mr. and Mrs. D. L. Miller

Ms. Beverly M. Nilsen

Mr. and Mrs. J. Churchill Owen

Mr. and Mrs. J. V. Petersen

Mr. Benjamin T. Poxson

Mr. and Mrs. Tyrus B. Poxson

Arthur and Helen Rippey

Ranger Rogers

Mrs. Edgar H. Rust

Mr. and Mrs. William H. Stone

Mrs. Lydia B. Toll

Mrs. Margaret Wallace

Mrs. Ruth P. Waring

Rev. and Mrs. Harry Watts

Kurt Weber

Mrs. R. H. Weed

Pearl Wright

Dr. Helen M. Zeiner

In memory of Wayne Guy

Dr. and Mrs. Robert Kosanke

In memory of Clara Mitchell Van Schaack Humphreys

Joseph Barker

Mrs. Baxter Lanius

Mrs. Ida Q. Mitchell

John C. Mitchell

Mr. and Mrs. J. Churchill Owen

In memory of Mrs. Alonzo Lilly

Mrs. W. Seward Iliff, Jr.

Contributions of cash, goods, or services have been received from the following friends:

The Am. Society of Landscape Architects, Colo. Chapter

The Colorado Cactus and Succulent Society

Dorothy R. Kaye

Little Valley Nursery

Dr. Paul Maslin

Earl J. Sinnamon Estate

Dr. Allan R. Taylor

The Ultra-Violet Club



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213 New Members in August

A hearty welcome to you all. We are delighted to have you as members and hope you will enjoy your association with us. Special thanks to the 234 people who renewed their memberships.

Step Into My World

The Denver Orchid Society will host its annual show in the Hall on October 9 and 10 from 9 to 4 p.m. on both days. Lectures, flower judging, exhibits, plants for sale...all this and some of the most beautiful flowers imaginable. Come and see.

Calendar of Events

October 1982

1)		Education Building—Mitchell Hall	Colorado Potters Guild SHOW & SALE OPEN TO PUBLIC 9:00 to 4:30
1)*	9:30 a.m.	Education Building—Classroom B	"Potpourri Workshop
1)*	11:00 a.m.	DBG House—Main Room, Dining Room	Civic Garden Club
2)		Education Building—Mitchell Hall	Colorado Potters Guild SHOW & SALE OPEN TO PUBLIC 9:00 to 4:30
2)	9:30 a.m.	Education Building—Classroom A	Gloxinia Gesneriad Growers
2)*	10:00 a.m.	Education Building—Classroom B	"Environmental Awareness for Pre-Schoolers"—Heidi Fine
4)*	9:30 a.m.	DBG House—Main Room	DBG Associates Board
4)*	7:00 p.m.	Education Building—Mitchell Hall	Colorado Wildlife Federation Reception
5)*	9:30 a.m.	Education Building—Classroom B	Parks & Recreation Dept. Supervisors
5)	7:30 p.m.	Education Building—Classroom B	Denver Bonsai Club
6)*	7:30 a.m.	Education Building—Mitchell Hall	Mile High United Way
6)*	9:00 a.m.	Education Building—Classroom B	"Botanical Drawing"—Angela Overy
6)*	1:00 p.m.	Education Building—Classroom C	"Tropical Plants"—Peg Hayward
7)*	8:00 a.m.	Education Building—Classroom C	Parks & Recreation Supervisors
7)	7:30 p.m.	Education Building—Classroom C	"Plant Materials in Landscaping"—Rollinger and Watson
8)*	9:30 a.m.	Education Building—Classroom B	Potpourri Workshop
8)	7:30 p.m.	Education Building—Classroom B	Denver Dahlia Society
9)		Education Building—Mitchell Hall & Classroom C	Denver Orchid Society SHOW OPEN TO PUBLIC 9 to 4:00
9)*	10:00 a.m.	Education Building—Classroom B	"Environmental Awareness for Pre-Schoolers"—Heidi Fine
9)*	8:00 p.m.	DBG House—Main Room	Denver New City Opera
10)		Education Building—Mitchell Hall	Denver Orchid Society SHOW OPEN TO PUBLIC 9:00 to 4:00
10)	1:00 p.m.	DBG House—Main Room, Dining Room	American Hemerocallis Society
11)	7:30 p.m.	Education Building—Mitchell Hall	Colorado Mycological Society
12)*	9:30 a.m.	Education Building—Classroom C	"Perennial Gardening"—Andrew Pierce

Calendar of Events (Cont'd.)

18) 7:30 p.m. Education Building—Classroom B
 18) 7:30 p.m. Education Building—Classroom C
 19)* 9:30 a.m. Education Building—Classroom B
 19) 7:30 p.m. Education Building—Classroom B
 20)* 9:00 a.m. Education Building—Classroom B
 20) 7:30 p.m. Education Building—Classroom C
 21) 7:30 p.m. Education Building—Classroom B
 21)* 7:30 p.m. Education Building—Classroom C

22)* 9:30 a.m. Education Building—Classroom B
 23)* 10:00 a.m. Education Building—Classroom B

23)* 8:00 p.m. DBG House—Main Room

25) 9:30 a.m. DBG House—Main Room
 27) 9:00 a.m. Education Building—Classroom B
 27)* 10:00 a.m. Education Building—Mitchell Hall
 27)* 12:00 noon DBG House—Main Room
 28)* 9:30 a.m. Education Building—Classroom B
 28) 10:00 a.m. DBG House—Main Room
 28)* 7:30 p.m. Education Building—Classroom C

28)* 7:30 p.m. DBG House—Main Room
 29)* 9:30 a.m. Education Building—Mitchell Hall
 and Classroom A

29)* 9:30 a.m. Education Building—Classroom B
 29)* 2:00 p.m. Education Building—Mitchell Hall
 30)* 10:00 a.m. Education Building—Classroom B

30)* 6:00 p.m. Education Building—Mitchell Hall

November

1) 7:00 p.m. Education Building—Mitchell Hall
 2) Election Day—Offices Closed
 2) 7:30 p.m. Education Building—Classroom B
 3)* 9:00 a.m. Education Building—Classroom B
 4)* 7:30 p.m. Education Building—Classroom C

The Nature Conservatory
 Hi Country Bromeliad Society
 Parks & Recreation Supervisors
 Denver Bonsai Club
 "Botanical Drawing"—Angela Overy
 American Rock Garden Society
 Indoor Light Gardening Society
 "Plant Materials in Landscaping"—
 Rollinger and Watson
 Potpourri Workshop
 "Environmental Awareness for Pre-
 Schoolers"—Heidi Fine
 Denver New City Opera

Ultra Violet Club
 "Botanical Drawing"—Angela Overy
 Associates Annual Meeting and Luncheon
 Colorado Garden Show, Inc.
 African Violet Society of Denver
 Around the Seasons
 "Plant Materials in Landscaping"—
 Rollinger and Watson
 Men's Garden Club of Denver
 Ikebana International

Potpourri Workshop
 Traffic Engineering Retirement Party
 "Environmental Awareness for Pre-
 Schoolers"—Heidi Fine
 American Iris Society Pot Luck Dinner

Tempel Wildflower Lecture

Denver Bonsai Club
 "Grapevine Wreaths"—Nerys Hammond
 "Plant Materials in Landscaping"—
 Rollinger and Watson

Green Thumb Newsletter



Number 82-11

Denver Botanic Gardens, Inc.

Editor—Tommie Waidmann

November 1982

Development of the Morrison Horticultural Demonstration Center and Community Gardens Square

Perhaps you have noticed, as you visited or drove by the Gardens during the past month, the demolition of houses directly east of the Gardens between York and Josephine Streets. This is the first step, beyond the planning phase, of construction of an exciting new facility which will broaden both educational opportunities in horticulture and the public service/outreach program of the Denver Botanic Gardens.

The project began as an idea that would address the needs of handicapped gardeners, as first put forth in the "To Fulfill a Promise" Campaign. The idea was later modified to allow for the training of professionals who work with the handicapped thereby increasing the educational potential of the new facility.

During the developmental phase, we sometimes encountered periods of discouragement and frustration. In 1978-80 we were seeking funds for the project through the Land and Water Conservation Fund—a source of federal funds distributed through the Division of Outdoor Parks and Recreation under the State Department of Natural Resources. During the public review process which all such grant proposals must go through, one individual living near the project site suggested that "historic houses" would be destroyed if the project were approved. This one incident caused delay of the project for nearly a year while the Gardens contracted with Long-Hoeft Architects of Denver to do a thorough background study of the houses in question and determine their historic importance, if any. The consensus of their study was that in each case there were better examples of the various architect's/builder's work elsewhere in Denver and most of those other examples remained much closer to their original states than the houses on our project site. You can imagine then our discouragement after submitting these findings to the potential grantors only to be told our proposal would be turned down due to lack of funds (projects of other organizations having been funded in the interim).

When Gloria Falkenberg assumed the responsibilities of Director of Development, she took a keen interest in the Community Gardens Square project and began a search for funding from non-governmental sources. Her success is evidenced by the fact that groundbreaking is at hand. A substantial grant in 1981 from the Pauline A. and George R. Morrison Charitable Trust, combined with funds contributed through the "To Fulfill a Promise" Campaign enabled the Board of Trustees to authorize proceeding with the project.

Contributors to the project to date include:

- Pauline A. and George R. Morrison Charitable Trust
- The Coors Foundation
- The Associates of the Denver Botanic Gardens
- Helen K. and Arthur E. Johnson Foundation
- The Denver Foundation
- The Junior League of Denver
- First National Bank of Denver
- Delta Gamma Evening Alumni Association
- Botanic Gardens Members & Public Spirited Citizens

Immediately upon determining the project could proceed, efforts began to identify individuals, organizations, neighborhood groups and others who might purchase one or more of the houses for a very nominal amount (\$3,000-\$5,000 to cover our legal and other costs), and move them to a new location. For over a year contacts were made with individuals and organizations who expressed interest in



Julia Beems, Horticultural Therapy Intern, joins Ed Davies, Coordinator of Volunteer Programs for the Society for Horticultural Therapy and Rural Training, Ltd. of Fromme, Somerset, England and John Brett, our Community Garden Coordinator on the site of the soon to be constructed Morrison Horticultural Demonstration Center in Community Gardens Square.

buying and moving the houses, advertisements were run in the *Denver Post* and *Rocky Mountain News*, and all possible leads followed up. In that time not one interested party could arrange the financing necessary to purchase a single house, move it and make it inhabitable once again.

In the meantime, the architectural firm of Abo, Gude & Associates in partnership with Brooks Bond, Solar Design Group, was preparing the preliminary drawings of the new workshop/passive solar greenhouse facility which would comprise the office and activities center for the Morrison Horticultural Demonstration Center. Herb Schaal, Principal Landscape Architect, and his staff at EDAW, Inc., of Fort Collins were simultaneously preparing the landscape plans for the Demonstration Center garden and community garden expansion.

In early August of this year the point was reached when a decision had to be made to authorize both architectural firms to proceed with the preparation of working drawings and subsequent bid documents. The Executive Committee regrettably was forced to concede that purchasers for those houses on the project site could not be found and they authorized demolition of the houses to clear the site for construction to begin by November. This brings us full circle and back to the point of groundbreaking.

This historical overview of the Community Gardens Square project may help you understand some of the important and painstaking decisions that go into each capital project that is undertaken by the Botanic Gardens. An upcoming article in a future *Green Thumb Magazine* will deal with the impact the Community Gardens Square project will have on the overall education and outreach programs of the Gardens. I hope you will watch for it and learn more about this innovative and exciting development.

Merle M. Moore, Director

Improvements In Telephone Service

The Denver Botanic Gardens' phone system is being updated in November to enable us to provide better service to our members and the public. If you have difficulty reaching us around November 10, this will be due to a short transition period while the work is being completed. Our phone numbers will remain the same: 575-2547 for general information and announcements of upcoming events; 575-2548 to reach a staff member.

1982 Holiday Sale



It's the 19th Annual Holiday Gift Sale at Denver Botanic Gardens Nov. 19 and 20. Charming chili pepper wreaths, gayly clad clowns and dozens of handcrafted treasures will transform Boettcher Memorial Center into Holiday Mall. Herb vinegars, cherished books and fragrance items as well as distinctive gifts for home, garden or lanai will also be for sale here. Sponsored by Associates of Denver Botanic Gardens, the sale will be held from 10 a.m. to 4:30 p.m. both Friday and Saturday.

Everlastings in flowers, cones, pods and other dried natural materials have become traditional at this two-day event. Daisy-like blossoms (*Xeranthemum*) in pinks, white and violet, golden yarrow, blue salvia, silvery moneyplant are ever-popular for winter bouquets. Also in the Lobby Court will be ornamental grasses, giant stars-over-Persia, gourds, cones from great to small—these are among Nature's wonderous harvest, fascinating to browsers and craftsmen alike.

Herb Vinegars, regular and tarragon, have been blended from a generations-old secret recipe by members of Botanic Gardens Guild to further their projects at the Gardens. Caesar would have cried with delight had his salad been laced with such zesty flavors.

Fragrance Corner. Tucked into dainty sachets and tranquility pillows are potpourris in 22 exotic scents. New are woven baskets from vetiver roots grown in the Far East; these will remain fragrant almost indefinitely and gently scent items stored within.

Myrrh necklaces, one of the gifts offered by the Magi, are strands of beads imported from Western Africa where natives pick the resin from small trees and form it into tiny beads. When worn, body heat warms the myrrh to release its scent. Other fragrance items are rose soap leaves from England and light bulb rings, when filled with aromatic oils, perfume an area. A selection of essences, oils and fixatives will be available for those who wish to mix their special potpourris. Cinnamon sticks and vanilla beans are traditional here.

Yuletide Treasures. Wreaths of bay leaves, chili peppers and some wreaths with silk flowers or pretend fruits on natural fiber mats will be offered. Rudolph, fashioned from palm bark and festively ornamented, will brighten an entry or fireplace wall. Silk flowers and foliage have been artistically arranged in fanciful baskets. Of course, the captivating clowns that adorned last year's Lobby Court tree will be sold.

Enchanting Amber. Lustrous amber with tiny insects or botanical inclusions has been shaped, polished and crafted into rings, pendants, bracelets and necklaces. Scientists believe this hardened fossil resin was formed some 40 million years ago and often encased the flora and fauna of an ancient forest.

Jewelry will also be found in cloisonne, enamel or jade, each piece carefully chosen for sale in the Gift Shop.

Gourmet Pleasers. Marble has been utilized in cheese slicers, mortars and pestles, egg cups, food warmers for breads, potatoes or corn—each basket has a slice of marble to warm and insert into the tray's fabric lining. Pleasing in lucite and chrome are nut twisters, pepper mills and sea salt mills; English placemats and coasters of floral prints laminated on cork; Oriental bowls, cups and teapots; tins for kitchen-fresh goodies; decorative linen towels and hostess aprons with herbs, vegetables, fruits, flowers or woodland friends; pastel on white appliqued guest towels and handkerchiefs from China.

Books Are Forever. More than 400 titles are offered in the Gift Shop and many pertain to Colorado: *History of Colorado for Children*, Epstein; *Roadside Geology of Colorado*, Chronic; George Kelly's books on trees, shrubs, ground covers and *Rocky Mountain Horticulture*; *Grow Native*, Huddleston and Hussey; *The Mushroom Basket*, March; *Rocky Mountain Flora*, Weber; *Colorado, Rocky Mountains* both by Muench and Sumner. Denver Botanic Gardens' publications are *Meet the Natives*, Pesman; *Rock Alpine Garden*, Callas; *Cemetery to Conservatory*, Arps and Petersen. Among the specialized subjects are solar gardening, herbs, dried bouquets, orchids and many more.

Gardeners' Delights. Wind chimes and mobiles are in ceramics, heat-treated glass, brass or pottery, some with weathered wood; all are in nature motifs—owls, leaves, birds, butterflies, seahorses. Harriet Will's suncatchers are always fun. Perky pot perchers include hippos, turtles, pigs and other animals. Fascinating plant rooting balls—insert plant cuttings into see-thru balls, attach the metal hanger over a rod and watch 'em grow! Isabel Bloom statuary for house or garden has become classic.

Stationery and Calendars. Designed especially for the Gardens are note papers of blue gentian by Carolyn Crawford and Oriental poppy by Koichi Kawana. Calendars featured are *Colorful Colorado* and *Wildlife of the Rocky Mountains*.

Gifts for Home or Office. Handsome brass reproductions of antiquities with soft hand-rubbed old world bronze finish are offered in sconces, Shaker candlesticks, lovely and useful magnifying glasses. Paperweights are in lead crystal, Venetian glass, lucite with natural materials encased, some in Mt. St. Helen's glass; Celadon vases and jardiniers; Lasercraft walnut desk accessories; figurines in brass, rosewood, carved soapstone; bells in cloisonne, crystal, ceramic or brass. Recently found 50-year-old paintings on silk are exquisite, matted and framed in bamboo; matted prints of mushrooms, roses, irises and other florals are prized gifts.

Memberships And Certificates are thoughtful gifts. As always, a gift from the Gardens is a gift to the Gardens, for all proceeds benefit Denver Botanic Gardens.

B.E.P.

New Members In September

We are delighted to welcome 176 new members and 238 renewals during the month of September. A sincere thank you for your support and interest. We hope you will participate in the upcoming events at the Gardens.



BUTTERFLIES AND MOTHS. Susan de Treville.

San Francisco: Troubador Press, 1981.

j QH 544 D4874

In this coloring book, the author presents a very effective way for children to become interested in nature. This book requires that a child know how to read in order to be able to color the butterflies, moths and flowers as described in the text.

Guidelines for classifications of species are given in the text in simple language along with interesting facts about their living habits.

Since this is a coloring book, the interested person should come to peruse the library copy and then decide to buy a personal copy.

WHAT'S IN THE WOODS. June Goldsborough.

Englewood Cliffs, N.J.: Prentice-Hall, 1976.

j PZ 7 G6537

This paperback features beautiful colored illustrations by the author. The story focuses on making correct and complete observations of what one sees in order to avoid being afraid or threatened. One supposes that the friendly, smiling countenance on the last page will be reassuring rather than endangering to the inhabitants of the woods.

IDLE WEEDS: THE LIFE OF A SANDSTONE RIDGE.

David Rains Wallace.

San Francisco: Sierra Club Books, 1980.

QH 105.03 W3555

Almost any natural location would prove to be a setting for many dramatic happenings to such a keen observer as Mr. Wallace. He apparently chose Chestnut Ridge because it is a borderline between two very different ecosystems and because it has suffered much environmental disruption in recent years. This author's knowledge of the most intimate details of animal behavior makes his explanations of their actions most fascinating. One's understanding of the wilderness and concern for its preservation could be deeply enriched by this book.

SIMON AND SCHUSTER'S GUIDE TO INSECTS.

Ross H. Arnett and Richard L. Jacques.

New York: Simon and Schuster, 1981.

QL 473 A7547

Many books about insects are available. What makes this one special is the excellent color photography. A key precedes the concise description of each species entry. Habitat, geographical distribution, notes on particular habits are included for each specimen photographed. Directions for collection and preservation may lead the novice to a career as an entomologist or encourage a good hobby. A glossary precedes an index of scientific and common names allowing easy access to the entries.

THE AUDUBON NOTEBOOK.

Richard E. Nicholls, ed.

Philadelphia: Running Press, 1982.

This book uses a unique format in that every other page is topped with a thought-provoking quotation from well known authors and the rest of the pages are left blank for the owner to add his/her own thoughts, reflections, etc. Although birds are the main subject of all illustrations, the quotations are often of a very general and inspirational nature.

SYRUP TREES. Bruce Thompson.

Fountain Hills, Arizona: Walnut Press, 1978.

SB 239 M3 T4656

The production of maple syrup is not common in the Rocky Mountain area. The author mentions the box elder as a very good source of syrup so there may be a chance that syrup can be obtained in our geographical area. Lists of what trees to tap, equipment and supplies needed, when and how to tap and how to process the sap make up the first half of the book. Recipes for desserts, vegetables and meats, all including maple syrup fill most of the second half. An appendix containing bibliographical entries, organizations and other relevant information precedes the index.

THE SCENTED GARDEN. Rosemary Verey.
New York: Van Nostrand Reinhold Co., 1981.
SB 454.3 F7 V474 1981

As the author points out in her introduction, sweet smells and heady perfumes have been important to people for more than two thousand years, both for personal adornment and for religious purposes. Too often modern gardens have become showpieces of color and arrangements responding to season and landscape design while missing one very important floral attribute: the scent of flowers and leaves. This book was written to make the reader aware of the enjoyment which may be derived from fragrance and which can be pleasurable in the garden and in the house.

Mrs. Verey has done much research into the history and legends pertaining to many plants while growing them in her own garden at Barnsley House, Gloucestershire, England.

The information she supplies also includes an appendix listing plants which produce scented flowers or leaves and addresses of American and British suppliers. Instructions are given for indoor and outdoor culture as well as instructions for the use of culinary herbs.

Some illustrations are reproductions of herbal plates, others line drawings. Most are in color.

PLANTS AS PETS. Robert P. Bauman.
New York: Dodd, Mead & C., 1982.
SB 419 B385

This paperback is a good book to promote a beginner's interest in house plants. Mr. Bauman stresses that the plants chosen should fit into one's environment. Choice, setting and care will lead to healthy plants which can then be propagated and shared. In the four appendices to the book, the author specifies plant qualities and needs from which the owner can choose, grow and enjoy all the attributes of his pets.

My appreciation and gratitude to Genevieve M. Kruzel who has been editing **Library Lines** since March 1982. Genny did an excellent job, changing the format to one much more attractive and introducing many new reviewers to the columns of **Library Lines**. Genny has taken a full-time job and is also going to school as a part-time student. Many thanks and the best of luck to you, Genny.

Should anyone be interested in assuming this volunteer task, please call Solange Gignac at 575-2548.

YOUR FIRST GARDEN BOOK. Marc Brown.
Boston: Little, Brown and Company, 1981.
j SB 457 B7795

Mr. Brown has produced in 48 pages a very useful basic text for people who want to start to garden. These people may be children or adults wanting to share one of life's consuming passions: gardening.

The colored illustrations enhance the directions which are enumerated under the headings: 1) you will need; and 2) how to do it. Sensible and humorous advice is given throughout by animal caricatures. The organization of this book is excellent. Sources are listed, a glossary and index included.

THE LORE & LEGENDS OF FLOWERS.

Robert L. Crowell
New York: Thomas Y. Crowell, 1982.
GR 780 C769 also j

The history, botany and the lore of tulips, narcissi, crocuses, irises, carnations, roses, nasturtiums, dandelions, marigolds and dahlias are presented in a very happy combination of a well written, interesting and obviously well researched text by Mr. Crowell and the beautiful resplendent and excellently reproduced art of Anne Ophelia Dowden.

This book will bring delight and knowledge to all who read it.

NATURE'S CLEAN-UP CREW: THE BURYING BEETLES. Lorus J. Milne and Margery Milne.
New York: Dodd, Mead & Company, 1982.
j QL 595 S5 M5 1982.

The Milnes have written many books in the field of natural history. This one has been as well researched as others. The activities of the burying beetles are described, documented and related in such a way that one becomes sympathetic to the rather grave and possibly unpleasant work of ridding an area of dead birds, mice, garden snakes and other seemingly too large animals for a beetle to move. The photographs and line drawings prove this to be the case, an interesting facet to the maintenance of a food chain contributing to the ecological balance: all this rarely observed and probably less appreciated.

The first seven reviews in this issue were written by **Hazel Kellogg**, library volunteer; the rest by **Solange Gignac**, librarian.

Gardening Tips for November

Now is a good time to check all your trees and shrubs to determine whether or not they have sufficient moisture to carry them into the coming winter months. Woody plants should not be allowed to go into the winter months in a dry condition. They need reserve moisture to combat the dessicating cold that follows. Cold alone is not usually a problem with the hardy plants in this area but cold along with low humidity, typical in the winter months, windy conditions and dry soil contribute to the winter kill that often occurs. This was experienced last fall and winter and as a result, many trees and shrubs were severely injured—some dying by the middle of the summer.

Even if you irrigate to keep your lawn green or if there are occasional rains or snows in the next few weeks, a deep watering is still advised. Lawn watering and most light rains and snows fail to penetrate deep enough to do much good for your more deeply-rooted trees and shrubs.

To deep water properly it is advisable to use a hose-attached soil needle such as the Ross Root Feeder. Insert the rod in the ground, angling it slightly away from the plant, to about one-half the depth of the rod, or about eighteen inches. Turn the water on full force and allow the rod to remain in the soil a minute or so. Move it six to eight inches and repeat the process. On established trees and shrubs this should be done in a circular area around the plant, starting just inside the so-called "drip line," and extending several feet beyond. This is a time-consuming task but very worthwhile because it puts the water down where the root system is and in addition, helps to aerate the soil for better root growth.

This is a much preferred method over soaking with a lawn sprinkler, particularly in heavy clay soil. Thoroughly saturated, heavy clay soil can create an oxygen starvation condition in the root zone. Plants under such conditions will dry up in the same manner as if the soil had insufficient water because root rot will begin to occur and the roots cannot take up the water.

If you have newly-planted trees and shrubs, use the soil needle just outside the original root ball, also angling it away from the plant, but occasionally pushing the soil needle into the root ball itself to ensure that it gets adequate moisture. Avoid leaving the soil needle in one spot too long to keep from water-logging the root system.

You can reduce the frequency of watering by applying a loose mulch on the surface of the ground over the root zone. Wood chips, composted leaves or any other organic material that does not compact would be suitable. For best results apply a mulch 4" or deeper. Such mulch will also help in preventing the soil from freezing too early on recently-planted nursery stock. This will allow the plant more time to develop a root system and it will be better able to cope with the winter conditions.

Your evergreen trees and shrubs need supplemental water during extended dry periods through the winter months. Evergreens lose water at a more rapid rate than deciduous plants because they have foliage with a large surface area exposed to the elements, making them more subject to water loss.

Keep in mind that a plant, while called dormant in winter, is still active in the sense that it must take up and replace water lost. Such activity occurs during cold, freezing weather, although at a slower rate.

You need not fear that watering at this time will stimulate late growth. Plants that are hardy and acclimated to this climate have gone into sufficient dormancy. That is, they have changed their chemistry sufficiently that watering now will not reverse the process.

Dr. James R. Feucht, Professor
Horticulture, Colorado State Univ.



A bouquet of roses to the Garden Club of Denver for staging "Denver Settings," a cleverly conceived and dramatically presented fund-raising exhibit. Pictured above is "Breakfast at the Fairmont" arranged by Mrs. Stephen Waters and Mrs. James Waters. Portions of the display were contributed by the Fairmont Hotel (china and linens), Kazoo and Company (dolls), and the Brass Bed of Denver (brass bed and quilt stand).

Garden Tours

WILLIAMSBURG, VA

Williamsburg and Richmond tours are set for April 16th, 1983. Plans are well in hand for this exciting tour to include the fine Garden Symposium put on by Williamsburg and the American Horticultural Society.

SOUTH AFRICA September 16th, 1983

Further work has been done on details of this trip and among the features included are the world-famous Kirstenbosch Botanic Gardens, Kruger Game Reserve, Table Mountain and the Karoo Botanic Garden. Private gardens will predominate on certain days and visits will be made to Sima Eliovsons, a leading plant author of S. Africa, Oppenheimers for their 40-acre spectacle and to the Douglas estate. (Head of Westinghouse Electric.)

More details of these two exciting tours can be obtained from Dennis Briel at Travel Associates (759-8666) or Andrew Pierce at the Gardens.

WHERE AND WHAT ELSE?

We are also interested in other areas of travel in which members are interested. Send your ideas to the Tour Committee at the Gardens and we will see how they can be incorporated into our future schedules. Give us your thoughts nationally and internationally.

Lobby Court

The Lobby Court display for November combines a bit of Southwestern flavor with a more traditional Thanksgiving harvest theme in a display of ornamental peppers (*Capsicum annuum*). Included are several interesting varieties with unusual differences in fruit shape and foliage color. Colorful "ristras" (chili peppers tied together in strings for drying) accent the plantings.

A Staff In Transition

A botanic gardens' staff, like its plant collections, seems always to be in some state of growth, development and transition. This has certainly been evident here at the Gardens over the past two months as first Dick Schimming, Plant Propagator, and then Margaret Wallace, Horticultural Education Specialist, have retired. Dick Schimming's service with the City and County of Denver spanned nearly 22 years, first as a Gardener Florist and then Plant Propagator. He played a vital role in the Gardens' plant introduction program propagating hundreds of plant species and cultivars for testing and evaluating of their landscape potential in Denver and the Rocky Mountain Region. His skill in making plants grow is most evident in the Rock Garden where he played a key role in assembling one of the world's comprehensive collections of alpine and sub-alpine plants for enjoyment and study.

Dick's ability to infect others with his own enthusiasm for working with plants, and his effective manner of imparting information, made him a favorite of the college interns who have been fortunate enough to work under his supervision. He treated them as the eager young botanists and horticulturists they aspire to be and they absorbed all the knowledge he could impart in their brief time together.

Dick was not a staff person who was highly visible to the visiting public and members. For that matter, working quietly in the propagation area of the greenhouse complex, he was generally somewhat isolated from the staff as well. However, his enormous talent in getting seeds to sprout, cuttings to root, and grafts to take were always evident in the growth in number and quality of the plant collections of the Gardens. As he retires, Dick leaves a proud legacy of dedication to his profession and the Botanic Gardens. He also leaves the Gardens with our deep appreciation for a job well-done, our considerable respect and our sincere best wishes.

While Margaret Wallace's tenure at the Gardens began as part time editor of the Green Thumb Magazine and Newsletter in 1971, a "modest" 11 years ago, her accomplishments in that time are very impressive. Drawing upon both her academic training in botany and history at the University of Denver, and her skills gained in administrative positions at DU and Temple Buell College, Margaret began development of what today has become a comprehensive year-round program of classes, workshops, field trips, guide training courses, lectures and more.



Margaret doing her thing.



Dick Schimming receiving retirement certificate from Mayor Wm. McNichols.

As the physical plant of the Gardens expanded Margaret built an education program that took advantage of each new feature. She worked closely with botanical and horticultural societies, clubs and organizations to encourage their participation in the Gardens' development, while offering space for their meetings, exhibits and sales. She helped to develop guide training for volunteers wishing to guide in the Conservatory or in the outside grounds.

Margaret was instrumental in the creation of the College Intern program and has seen it grow from one intern each summer to seven students in 1982. She also worked with high school interns and students on work study programs, all of which maximize the educational opportunities of the young people selected for our program, as well as those members of the staff who regularly interact with these inspired, enthusiastic and knowledgeable students.

As editor of the Green Thumb Newsletter, Margaret has for the past 11 years provided a vital link between the Gardens and its members. The Newsletter, by providing timely and pertinent information, keeps our members informed and actively participating in the Gardens' many educational opportunities.

As I was discussing Margaret's retirement plans with her, and preparing my recommendation to the Board for future staffing needs in the education department, I realized just how many duties she had acquired over the years as new tasks were generated by a rapidly-growing botanic garden and *somebody* had to be responsible for them. Such things as public relations contacts and dealing with the media; directing potential new volunteers to the proper contact person; showing Mitchell Hall or other rooms to potential renters of those spaces; helping a plant society get just the right set-up for their show; arranging for a traveling exhibit to be shipped, set-up, taken down and shipped again; and the list goes on and on.

Somehow, in the midst of all that she was doing, Jack Wallace got her attention long enough to propose matrimony and for Margaret to accept. So it is on to a new and different set of interests. A lifestyle that includes winters in Las Vegas and summers in Denver. However, Margaret assures me we have not lost a staff member but gained a volunteer—at least for 6 months of the year. That is a promise I intend to hold her to!

I'm glad I don't have to say "goodbye" to Margaret and Jack—Just "see you in the spring." There is no way I can imagine in this brief commentary to appropriately thank Margaret for the remarkable contribution she has made to the Denver Botanic Gardens. Perhaps however, over the next 10 years or so, as I welcome her back to volunteer each spring, I will find a different way each time to let her know how much we all appreciate the fine job she has done and the many friends she has made at the Denver Botanic Gardens. Margaret and Jack—we wish you both the very best as you share your retirement years ahead together! Best wishes from the entire Botanic Gardens staff.

Merle M. Moore, Director

Tributes

In memory of Mrs. Eugene H. Adams

Mr. and Mrs. John C. Mitchell

In memory of Anna Reynolds Morse Garrey

Mrs. Mackintosh Brown

Margaret Chenoweth

Elizabeth and Emerson Ellett

John and Wanda Flick

the Garden Club of Denver

Elna Gibson

Mr. and Mrs. John Fleming Kelly

Mrs. Thomas B. Knowles

Mrs. Alice McWhinney

Mr. and Mrs. John C. Mitchell

Jane and Rob O'Donnell

Mrs. Elizabeth H. Pesman

James K. Penfield

Jane Silverstein Ries

Dr. and Mrs. Norbert Shere

Constance W. Smith

Dr. and Mrs. Moras L. Shubert

the Ted Washburne Family

Betty and Dick Yates

In memory of Mrs. Ruth Hackstaff

Mrs. Sidney E. Blandford

In memory of Mrs. Laverne McNichols

Lawrence A. Long

Mr. and Mrs. John C. Mitchell

In memory of Helen and Edmond Thwaites

Genevieve Ellis

Contributions of cash, goods, or services have been received from the following friends:

Mr. and Mrs. Charles Buswell

Colorado Watercolor Society

Denver Artists Guild

Mrs. G. A. Fahlberg

Elise Huggins

Dan Jewett

King Soopers

John G. McFee

Oscar and Cordell Otto

Ed and Nancy Richard

Mary R. Richardson

Roadposter

Paul A. Sandoz

Alice Wood

Classes

There are still vacancies in the field trip to the poinsettia greenhouse on December 1. Don't wait too long to register if you are interested in touring this establishment.

Botany Club

The Botany Club will meet November 19 in Classroom C at 7:30 p.m. The featured speaker will be Dr. Richard Schwendinger. He will give a slide presentation on his visits to various botanic gardens. This event is free and open to the public. Everyone welcome.

Formation of New Gesneriad Club

As announced in last month's issue, another gesneriad club is being planned. If you are interested please contact Emma Lahr at 771-5200 or Isla Montgomery at 355-4991.



Calendar of Events

November 1982

1)	7:00 p.m.	Mitchell Hall
3)*	9:00 a.m.	Classroom B
4)*	7:30 p.m.	Classroom C
6)	8:30 a.m.	Classrooms B,C
11)*	7:30 p.m.	Classroom C
17)	8:30 a.m.	Mitchell Hall
18)*	7:30 p.m.	Classroom C
19)	10:00-4:30	Mitchell Hall
20)	10:00-4:30	Mitchell Hall
25)	All Day	

December 1982

1)*	9:00 a.m.	Classroom C
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*Members or Enrollees only

Dr. Tempel Wildflower Series—Loraine Yeatts, Speaker
“Grapevine Wreaths”—Nerys Hammond
“Plant Materials in Landscaping”—Al Rollinger, Larry Watson
National Science Foundation
“Plant Materials in Landscaping”—Al Rollinger, Larry Watson
Wildflower Workshop
“Plant Materials in Landscaping”—Al Rollinger, Larry Watson
GIFT SHOP HOLIDAY SALE
GIFT SHOP HOLIDAY SALE
HAPPY THANKSGIVING!

“Field Trip to Poinsettia Greenhouse”—Steve Olson



May Bonfils Stanton Rose Garden is dedicated, August 31, 1982. Pictured (L. to R.) are Lawrence A. Long, Trustee and Past President of the Board; Charles E. Stanton, President, Bonfils-Stanton Foundation; John C. Mitchell, II, Trustee and Past President of the Board; and Merle M. Moore, Director of the Botanic Gardens. Also participating was William H. McNichols, Jr., Mayor of Denver.

SAVE THE DATE
 "HERALDING THE SEASON"
 December 12, 1982
 3:30 - 5:30 p.m.
 The Boys & Girls Choir
 from
 St. John's Cathedral
 in
 John C. Mitchell Hall

Denver Botanic Gardens, Inc.
 909 York Street
 Denver, Colorado 80206
 303-575-2548

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November 1982

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Green Thumb Newsletter



Number 82-12

Denver Botanic Gardens, Inc.

Editor—Tommie Waidmann

December 1982

Helen Fowler Library

How many books on orchids are there in the library? How do you skeletonize leaves? What is the symbolism of the black rose and of the yellow rose? Did Clements first use the phrase "plant indicators?"*

These are a few of the reference questions which have been asked of the librarians lately. Answering such questions for the staff, for the members of Denver Botanic Gardens (DBG) and for the public is the primary responsibility of the librarians. The book collection reflects the present needs of all the users as well as the anticipated or projected undertakings which may require library support in their development.

The Helen Fowler Library was founded in 1947 when Horticulture House at 1355 Bannock St. became the headquarters for the Colorado Forestry and Horticulture Association. In March 1948, Mrs. Fowler who with her husband owned Shadow Valley Gardens, a large nursery in Wheat Ridge, was named honorary librarian. Mrs. Fowler's books formed the nucleus of the collection. Many of these volumes are now housed in the Waring Rare Book Room.

In 1971 at the completion of the Education Building, the collection was moved to its present site occupying 4000 square feet on two floors. There are now 12,325 books, 297 periodical titles and approximately 5000 pamphlets. Non-book items include a small collection of microforms, many original water colors of wild flowers: the works of Emma Irvin, Lillian Hallock and some of Caroline Crawford's pastels.

The strengths of the book collection reflect the strengths of the plant collections. Orchid and bromeliad literature, alpine and rock garden books, landscape architecture resources, a strong collection of juvenile books on botany, horticulture and natural history are strong areas of concentration. A personal ambition of the full time librarian is to have a flora of every country of the world.

The physical layout of the library is now very different from its original plan. The circulation desk and the security system are the first sights viewed as the patron enters the room. A bulletin board featuring seasonal displays or promoting a particular event is on the right as are the shelves devoted to showing off new books. Next is a five-shelved stand which houses the folio volumes exhibiting the wild flower water colors of Emma Irvin. The assistant librarian's office and the work room complete the south wall.

The window in the east and north walls are long and narrow and provide good natural light. Should you come to the library in the morning, you will see that all the drapes on the east side are closed. This is to prevent the sunlight from deteriorating the books. The sun's rays cause not only discoloration but also are harmful to paper over a period of time. Along the east and north walls below the windows are shelves. The east shelves hold a collection of 124 loose-leaf folders of plant illustrations. These were given to the library by the granddaughter of Olive Mason Gunnison, an eastern naturalist who compiled the albums during the last eight years of her life. Although there are newer sources of illustrations, Mrs. Gunnison's collection is still very useful.

The north shelves house folders containing information about other botanic gardens, public gardens, estates open to the public, etc. These are alphabetical by state and by country. This information has pleased patrons who are preparing trips to other gardens in the United States and throughout the world. Materials of this type are gladly accepted to update and to expand the collection.

The Index Seminum lists also find a home on these shelves after having been perused by appropriate staff members. An Index



Solange, right, and Gail shown in library.

Seminum lists seeds being offered annually by one botanical institution to another or by plant societies to their members and to institutions. The Denver Botanic Gardens produces an Index Seminum which is sent throughout the world.

Against the west wall are the four vertical files which hold pamphlets. These are selected from *The Monthly Catalog of U.S. Government Publications*, from *The Monthly Checklist of State Publications* and from announcements in periodicals. The files are constantly weeded so that all the material is less than five years old except botanical information which ages more gracefully. All the material in the vertical files is cataloged. The cataloging is limited to the main entry and to one subject heading. The cards are filed in the smaller card catalog cabinet. The larger card catalog cabinet refers to the book collection. In both catalogs, the arrangement is that of a dictionary catalog, i.e. all the cards are in alphabetical order, not separated by author or subject. As the library collection enlarges, a second cabinet will soon be needed (unless the system is automated) and the catalog may be split into a subject and title catalog and one of authors.

Behind the public card catalog is the piece of furniture in which the periodicals are kept. Only the current issue of the 297 titles is in here because of lack of room. The back issues are all stored in the basement. During the past summer, Rhoda Burrows, an intern, compiled a subject guide to the periodicals. A copy of this guide is on the bottom shelf. An update of all periodical titles is done annually. This list is attached to the inside of the doors of the periodical rack.

The remaining space on the west is occupied by the librarian who moved from the less visible office in order to be more available to the public. On the shelves behind her desk are all those books, folders, materials which are the tools of the trade: the classification schedules of the Library of Congress, (LC) the subject headings of LC, Books in Print, the shelf list, etc.

In the northwest corner of the library, an enclosed area of 240 square feet houses the Waring Rare Book collection. The room was donated by Dr. and Mrs. James J. Waring. The temperature and humidity are controlled to provide the healthiest atmosphere for the beautiful leather bound volumes and for the preservation of the paper. Dr. and Mrs. Waring collected herbals and other early

Helen Fowler Library (Continued)

botanical works and presented these to the library when the room was completed. In 1973, Mr. and Mrs. Erl H. Ellis contributed a collection of early American botanical books; some of Mrs. Fowler's books and donations of Kathryn Kalmbach (books and botanical stamps) and Ruth Ashton Nelson also fill the shelves of the Waring Rare Book Room. During the past year, much of the annual donation from the Tremont Foundation has been used to repair, clean and to have boxes made to assure optimal conditions. The Waring Rare Book Room is open by appointment only.

The main portion of the library now needs to be described. Three oak tables and two coffee tables with chairs provide space for patrons to read, study, write, etc. The bulk of the room is occupied by the stacks. The book collection is classified according to the LC classification scheme, a system of letters and numbers particularly well suited for a special library collection.

The strengths of the library have already been enumerated but bear repetition: orchid and bromeliad literature; the juvenile collection; landscape architecture. Books on house plants and flower arrangements, Colorado botanical sources and horticultural therapy are also areas of great strength.

Solange G. Gignac is the horticultural librarian. A graduate of the University of Denver School of Librarianship and Information Management, Ms. Gignac has worked at the Helen Fowler Library for 12 years. Gail Fernald, also a graduate of the University of Denver is the assistant librarian. Ms. Fernald works on Saturday, on Sunday and on one day during the week.

The duties of the librarian are to provide reference service to the staff, to DBG members and to the public in person, by phone or by mail. The librarians are also responsible for collection development; classification and cataloging of the collection; compiling bibliographies and book displays for classes and meetings; recording, claiming and routing periodicals; accountability: i.e. providing reports to those whose funds have been spent for the purchase of books; editing the bimonthly publication *Library Lines*; gathering statistics and reporting to the director; bookkeeping; budget management; teaching classes on how to use the library; managing and keeping a good relationship with the volunteers.

Both librarians need the assistance of the 25 volunteers who are responsible for many tasks including book processing, discovering and recovering overdue books, upkeep of the seed and nursery catalog collection, writing letters, recording statistics, filing, typing, checking the card catalog for accuracy, and writing book reviews. The volunteers contribute the work of two full time people.

Many volunteers work on the annual book sale: sorting, categorizing, pricing books before the sale and conducting the actual sale. The book sale profit accounts for 80 percent of the library book budget. Some of the book sale volunteers begin to work in September; the forces are increased in February; in March, the operation is in full swing and the work continues through the days of the sale, on the week end of Mother's Day annually. Books are collected all year. Donations are accepted at the convenience of the donor. Books will be picked up by a DBG employee should the donor be unable to deliver the books himself/herself.

Other sources of income for the library include the monthly stipend given by the Associates of DBG; this accounts for 16 percent of the book buying budget. Gifts have been received annually from the Applewood Seed Company, the Colorado Cactus and Succulent Society, the Cherry Hills Heights Garden Club, Mr. and Mrs. John Clark Coe and memorials honoring various individuals whose memory is cherished by a book donation.

The library is a member of the Central Colorado Library System, of the Council on Botanical and Horticultural Libraries and participates in interlibrary loan.

*1) there are approximately 150 books on the identification and the distribution of orchids and over 100 books on the culture of orchids.

2) Skeletonizing leaves is a lengthy and delicate process well described in *Dried Flowers with a Fresh Look* by Eleanor Reed Bolton; Princeton, N.J., D. Van Nostrand 1958; SB 447 B658.

3) "In regarding color in the rose, some extremes may be quoted, although not which is the reddest, whitest or yellowest, but rather which is the darkest. The "black rose" has always been of sufficient interest to amateurs that from time to time a new "black rose" appears on the market. There is, in fact, no such thing, although in

many varieties the dark red color is so dark that, with a bit of imagination, it may seem black, but there are always some reddish overtones. Formerly, the darkest variety was 'Nigrette', a German introduction to 1934. Unfortunately, it is not a very strong grower, the few blooms it produces are small and the variety is only found in specialized collections today. Later, Meilland produced a variety called 'Super Congo' (1950), and today a variety called 'Norita' is probably the "blackest" rose."

This is a direct quotation from *The Complete Book of Roses* by Gerd Krussmann; Portland, Oregon, Timber Press in cooperation with The American Horticultural Society, 1981.

a) Yellow rose: Infidelity and jealousy; Bad luck gift to a woman. *Folklore and Symbolism of Flowers, Plants and Trees* by Ernest and Johanna Lehner. New York, Tudor, 1960.

b) Yellow rose: Decrease of love, jealousy. *The Language of Flowers*. Crawley, England, Beric Press, 1968.

4) Frederic Clements wrote the book *Plant Indicators* in 1916. This is believed to be the first use of the phrase.

A class on how to use the library will be taught by Solange G. Gignac on 13 January 1983 at 10:00 a.m. not to last beyond 11:30 a.m.

—Solange Gignac, Librarian



Double the value of your gifts—shop at the Denver Botanic Gardens Gift Shop. Open Monday through Saturday 10 a.m. to 4 p.m. and Sunday 10:30 a.m. to 4 p.m.

Gardening Tips For December

December is not the easiest month in which to talk about gardening, but there is one chore that needs to be done, depending on whether conditions are wet or dry. This is to deep water your trees and shrubs, providing the soil is not deeply frozen.

Experience in the past several dry winters has shown that even though the surface of the soil may be moistened by occasional snows, it is important to water down deeply during winter months because the moisture in the root system may be completely depleted. As a result, the trees and shrubs may suffer dieback or even death during the spring and summer months.

Rather than using a sprinkler to do this, it is better to deep-water with a hose-attached soil needle such as the Ross Root Feeder. The proper use of the soil needle is also important. It is not necessary to leave the needle in the ground in one spot for a long period. It is better to move it short distances, leaving it in each spot for no more than one minute. In this way, you will distribute the water more evenly without overwatering and, at the same time, provide some aeration to the roots. The latter is very important if the soil tends to be of a heavy clay type.

Cold drying winds can be tough on both broad-leaved and narrow-leaved evergreens. In addition to winter watering plants that are subject to prevailing cold winds, they might benefit from an application of an antitranspirant such as "Wiltpruf" or "Vapoguard". These are the same materials frequently used by nurserymen to prevent water loss during transplanting. Unfortunately, in the arid western states, these materials are not as successful as they seem to be in the midwest or eastern areas. This is because the dryer conditions create a greater vapor pressure deficit between the leaf surfaces and the air. This reduces the effectiveness of the film left by the antitranspirant that is supposed to reduce normal water loss.

If you do choose to use antitranspirants, be certain that the directions on the label are followed precisely. They should not be used when the air temperature is below freezing and if applied too heavily, can injure the plant by suffocation.

Perhaps a better way to protect evergreens that are exposed to dry winter winds is to erect some kind of barrier or screen. Frames with burlap stretched over them are ideal.

If you planted bulbs this fall, this would be a good time to apply a loose mulch over the surface of the ground. This provides good insulation and will prevent the bulbs from popping up too early in the spring when damage from frost is possible.

With the Christmas season coming on, everyone begins the annual search for a suitable Christmas tree. If you are planning to buy a cut tree, it would pay to check the tree carefully for freshness. One of the best ways to do this is to grasp the tree firmly and tap the cut end sharply on the ground, observing the amount of needle drop which occurs. If needles fall off easily, you have a tree that has been stored for too long a period of time. It is generally best to avoid spruce since they will lose their leaves more readily than will fir, pine or Douglas-fir. Beware of the Christmas tree lots that spray their trees green with paint. This can be detected by looking at the branches and trunks of the trees, where paint can easily be seen. Some states prohibit this practice.

Remember that Christmas trees can be a fire hazard in the home—even those that are newly cut. Even though a tree may be a bargain, it may end up being a disaster instead.

In recent years the practice of buying live Christmas trees has been on the increase. Much of this increase is apparently the result of concern for preservation. While this seems commendable, there are several drawbacks. Since the survival rate of live trees is rather low in the western states, one would wonder whether our natural resources are actually being preserved, or if it is just another waste of nursery stock. Should you decide to purchase a live tree, there are

several steps that should be followed. (1) Dig the hole for the permanent tree location now while the soil is still soft, covering the hole for safety's sake. (2) Soil dug from the hole should be placed in a location where it will not become frozen. If amendments need to be added to the soil, this should be done at this time. (3) Before the tree is to be taken indoors, keep it in a cool location, making sure that the soil ball is kept moist but not overly wet. (4) When taking the tree indoors, locate it in the coolest part of the house and away from heaters, air vents, television sets and direct sun exposure. Plan to keep the tree indoors no more than 3 days. Survival chances are reduced the longer the tree is kept inside. (5) Shortly after Christmas, return the tree to a cool, shaded location such as an unheated garage. If after a week or so, the weather is balmy, the tree may be planted out. Avoid planting during freezing temperatures. (6) When planting out, remove any container made of plastic, metal or paper fiber. If in a bushel basket, break the side of the basket after placing in the planting hole. (7) Following planting, apply a mulch on the surface of the ground over the root system four to six inches deep. Make sure the tree is watered in at planting time and watered as needed through the winter months.

Houseplant care should be another chore on your gardening list for this month. One of the difficulties during the winter months with houseplants is that the sun is at a low angle and this can create severe browning problems to plants in a south-facing exposure. Another problem is low humidity. With a furnace coming on and off at frequent intervals, the amount of air exchanged, particularly if it is a forced-air furnace, can be tremendous. This air is dry unless a compensating humidifier has been installed. Most houseplants are tropical and are accustomed to higher humidity and under conditions in most homes, will frequently show a marginal browning or loss of lower leaves; both signs of desiccation.

Unfortunately, when this occurs, there is a tendency to increase watering and this can lead to further problems. By increased watering frequency, water uptake by the plant can actually be reduced because the water replaces the air in the root ball.

You can help compensate for low humidity by installing a power humidifier to the furnace or by placing a portable one near the area where you are growing your houseplants. It is also sometimes helpful to place the plants on shallow trays containing coarse gravel which is kept moist. Be sure that the base of the pots are not submerged in water. This could result in drowning the plants.

If space is available, it is also helpful to group the plants together so that the evapo-transpiration becomes of mutual benefit to each plant.

Strange as it may seem another way to compensate for a lack of humidity is to gradually reduce the amount of water given to the plants. This tends to slow down metabolism of the plants and thus reduces water requirements. If you plan to do this, emphasis should be placed on the word "gradual". Sudden reduction of water will result in wilting and shock to the plant.

The common practice of misting the foliage is rarely helpful, particularly if the humidity in the home is very low. This irregular wetting and drying can actually create other problems, particularly if your water happens to be hard. As the water evaporates, the calcium salts that accumulate will cause discoloration and possible injury to the foliage.

Good luck with your holiday plants. Have a nice Christmas and best wishes for the New Year.

—Dr. James R. Feucht, Professor
Horticulture, Colorado State University

New Members

The Gardens welcome 114 new members and also the 179 who renewed their memberships during the month of October.



All Aboard! The trustees meeting was followed by a "hayrack ride" tour of the Arboretum arranged by Charles Paxton, Grounds Superintendent, to review the progress of development during the last year.

Tributes

In memory of Irving Breger

Dr. and Mrs. Robert Kosanke

In memory of Mrs. Anna Reynolds Morse Garrey

Anonymous

Denver Botanic Gardens Board of Trustees

Mrs. Philip W. Emery

Mr. and Mrs. David A.C. Moore

A. Reynolds Morse

Anne M. Vader

In memory of H.V. "Doc" Kniseley

Dr. and Mrs. Robert Kosanke

In memory of Robert McCoy

Dr. and Mrs. Robert Kosanke

In memory of Abe P. Miller

Dr. and Mrs. Robert Kosanke

In memory of George A. Patterson

Dr. and Mrs. Robert Kosanke

In memory of Emma R. Schoembs

Rose Danielson

Afton Dresskell

Dorothy Hull

Louise King

Pat Sherrett

In memory of Eloise Stroessner

Carol Williams

In memory of J. Elmer Weaver

Dr. and Mrs. Robert Kosanke

Contributions of cash, goods, or services have been received from the following friends:

Allan D. Bradshaw

Colorado Potters

Dave Ferguson

Solange Gignac

Virginia Hanson

Shirley Newsom

Award for Horticultural Excellence

A glow of pride is radiated when one of our own volunteers receives national recognition. We were pleased and proud to learn that Elaine Wallbank Jackson was honored in late September with the Zone XI Horticulture Award, presented by the Garden Club of America for horticultural excellence. Laine, one of our most dedicated volunteers, is a member of the Board of Trustees of the Denver Botanic Gardens, The Associates, a member of the Denver Botanic Gardens Guild, as well as the Garden Club of Denver, a G.C.A. affiliate.

Laine's list of horticultural contributions include redesigning the landscaping at Colorado Academy, designing the terrace and plant material around the 1982 Smedley House at 9th Street, in the Auraria complex, plus sharing garden techniques and knowledge with the residents of Westwood, one of Denver's low-income housing projects.

Closer to home, for we benefit from the fact she can walk around the corner, Laine oversees day to day care of the Guild's Herb Garden and the Garden Club of Denver's Home Demonstration Garden. She assists in choosing species for testing and evaluation and works with our plant propagator to refine methods for perpetuating species new to cultivation.

Congratulations, Laine!!!!!!!

Four Seasons Corporate Affiliates

We wish to welcome the following companies who have joined the Four Seasons Corporate Affiliates program for 1983:

American Television & Communications Corp.

Arthur Andersen & Co.

Deane Buick & Co.

Drive Train Industries, Inc.

Frontier Airlines

Gary Energy

IBM

Ideal Basic Industries

Kellogg Corporation

King Soopers, Inc.

Peat, Marwick, Mitchell & Co.

Public Service Co. of Colorado

Rocky Mountain Bank Note

Samsonite

Urban Investment & Development Co.

HAVE YOU?

If not, WILL YOU contribute to the Gardens' Annual Appeal for 1982? Your unrestricted financial support is important.



THE JOLLY GREEN GARDENER



ight had come, and deep in the forest shivering woodland creatures sat with soft snow piling up around them. They needed to find warm, safe places to spend Christmas Eve.

In their comfortable home, some happy children were busily decorating their Christmas tree. This had been a special day for them—one they would always remember. For it was today in the snowy woods that they had first noticed the baby trees. Pointing out the young seedlings, they had danced about shouting, “Don’t step on the Christmas tree!” or “This one must be a Christmas tree for the rabbits, it’s just the right size!”. Oh, it was a wonderful game, but the little trees were the most wonderful of all.

As if in a fairy land, the children imagined all the forest creatures trimming the tiny trees with bits of lichens, nuts and berries, and the glistening snow covering the trees with shining stars.

They knew right then that they couldn’t let their grandfather chop down the Christmas tree they’d come for. The animals and birds needed these trees for shelter. Their **evergreen** branches provided warmth and protection from the cold winter winds, and the trees would grow best and live longest if left alone.

Grandfather was kind and wise. He understood when the children wanted to leave the forest untouched and return home.

Along the way back, the children remembering the fragrance of the pines, secretly wished there was some way of having a real Christmas tree that year.

Well, Grandfather had been thinking it over too. Why, when he was a boy it was easy to go out in

card designed by
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the woods and cut down an evergreen just right for a Christmas tree. Back then, there were trees all around and far fewer people. But today was different. Millions of people wanted Christmas trees and cutting so many without replanting would mean there wouldn't be enough trees for future Christmases. He decided to take the children to a **tree farm**.

On a tree farm, new trees are planted every year—then each year a certain number have grown to just the right size for cutting. Grandfather explained that the trees were specially planted and cared for, graded for quality, size and variety. The children saw five different kinds of popular Christmas trees. Tall Douglas firs, White firs and beautiful Blue spruces, Scotch pines and full Austrian pines. They were delighted to see the little six inch seedlings, their favorites, growing in straight even rows. But what excited them most was the live potted tree that they bought. Their living tree wouldn't dry out and drop its needles, and after Christmas they could plant it in their yard or neighborhood park. The children and Grandfather agreed that with proper care their little tree would celebrate many Christmases with them.

Deep in the forest, the snow had stopped falling and the moon had begun to shine. A squirrel curled his tail around himself and went to sleep. Two little birds tucked their beaks under their feathers and went to sleep. Finally, a small white rabbit crawled under the low hanging branches to join the others and settled down snug and warm for the long cold night.

Most of us can't imagine Christmas without a tree, though when you think about it, chopping down a beautiful, healthy tree to decorate our homes for merely a few days might seem sad and wasteful to someone who hasn't grown up with such a custom.

Recycle Your Christmas Tree

- Cut off the branches and use them to blanket your flower beds.
They will help keep the ground an even temperature and therefore protect against an early thaw.
- Collect several discarded trees from neighbors and remove the branches. Save the trunks for spring when they can be assembled like tipis for bean poles.
- Use the shredded branches for mulch or add to your compost pile.
- Lean the tree with branches intact against a protected area in your yard—it will serve as a welcome shelter for birds especially if your yard has only deciduous trees. Make some holiday treats for the birds by adding strings of popcorn, pinecones filled with peanut butter/cornmeal mixture, and small pieces of suet tied onto branches with string.
- Fashion a birdfeeder from the wood of the tree's trunk. It will be a lasting remembrance of your Christmas.

*May All Your Days
Be Touched
By Nature's Wonderful
Gifts*

Merry Christmas

Internship in Applied Horticulture

Parents of students who are attending colleges outside our Rocky Mountain area may unwittingly be missing a one-of-a-kind opportunity to add to their children's educational experiences, help them with summer financial aid in this age of high unemployment, and do a big favor for Denver Botanic Gardens—all at the same time.

These students may be eligible for our ten-week summer Internship in Applied Horticulture. While preference for these internships will be given to botany, biology and horticulture students of the five Rocky Mountain states of Colorado, New Mexico, Wyoming, Utah and Montana, interpretation of this guideline also includes those students whose permanent address, perhaps with their parents, is in this region even though their educational pursuits have temporarily taken them much farther afield.

Educationally this internship offers young people a chance to get vital hands on experience in a multitude of the Gardens' many horticultural and botanical programs and to glimpse the possibilities of various career opportunities. This they accomplish while they receive a tax exempt stipend of \$1,400, as they lend the Gardens, in return, the much needed efforts of their minds and hands.

Do you have a son or daughter who is a student, who maintains a permanent address in the five state area and who would profit from being one of our ten college interns in 1983? If so, now is the time for that student to contact our education department for information or an application form. Notices are now being mailed to regional colleges and universities; the deadline for submitting applications and supporting documents is March 1 for consideration in next summer's schedule.

—Larry Latta
Botanist-Horticulturist



College Interns-1982. Field trip to Mt. Goliath and Summit Lake led by Director Emeritus, Dr. William Gambill Jr.

Around and About the Gardens

The Rock Alpine Garden in Winter

Unlike a woodland glade or a Japanese garden, alpine heights are rarely serene or reassuring. Awesome, terrifying, infinite: these are words often used to describe arctic and alpine wastes. We who are fortunate to live in the shadow of high peaks can note another, interesting phenomenon of mountains: whenever you are on the verge of being overwhelmed by their grandeur—just look down and notice the intricate detail of lichen on rock, moss and tiny-leaved plants which in a moment or two bring you back to earth.

A rock garden ideally balances these two extremes: the sweep of a grand vista on one hand and the intimacy of detail on the other. In spring and early summer, anyone can enjoy the rush of color in a rock garden. But just as human character emerges under adversity, so too does the Rock Alpine Garden reveal itself in the winter months.

To the west, views of Mount Evans are free of summer foliage in Cheesman Park. The garden is lighter and more airy. Dark mats of sun roses, arabis, and phlox are starting to cover and soften the stark contours of the rocks. The needles of dwarf conifers take on deeper, burnished tints.

The rocks themselves assume their rightful prominence in the winter months. Without the distraction of blossoms you are more apt to notice the complicated etchings that emboss every limestone boulder in the central portions of the garden. Their pink, gray, maroon and white surfaces are infinitely subtle, and often deeply pitted. Many plants entered the garden surreptitiously, attached to boulders—like the mountain mohogany that comprises a tiny, gnarled bonsai, a vigorous goldenaster (*Chrysopsis villosa*), and the striking clump of goldenrod and blue gramma grass next to the waterfall. Many more plants have been sown onto the rocks in the last three years, including alyssums, a birch and campanulas.

Winter is the best time to enjoy the several hundred sorts of hens and chicks and stonecrops that fill nooks and crannies throughout the garden. Most of these take on bronze and reddish tints at this season and are especially festive-looking. One of the most important groups of plants throughout the Temperate Zone mountains are the saxifrages. In Latin, the term means "Rock Breaker" and over a hundred sorts of saxifrage are busy breaking rocks throughout the Rock Garden and Alpine house. Their fleshy, silver-encrusted foliage is never more decorative than in the winter months. Isn't it interesting that plants have evolved the same succulence and roseate form to combat heat in the desert and cold on the tundra?

Not everything is foliage and texture: lots of late flowers are lingering here and there. The Christmas rose only starts to bloom in November and many heaths and heathers wait for winter to bloom. Last year we counted fifteen different flowers blooming on Christmas Day. Come see how many you will find!

—Panayoti Callas, Curator

The Don't Forget Department For Members Only... "Heralding the Season"

December 12th - 3:00-5:30 P.M.

Upcoming Events for December

2)	9:30 a.m.	African Violet Society of Denver	Main Room
2)*	1:00 a.m.	Guide's Tea	Main Room
2)*	7:45 p.m.	Denver Orchid Society	Mitchell Hall
3)*	8:00 a.m.	ROMCOE	Mitchell Hall
3)*	12:00 noon	Civic Garden Club	Main Room
4)*	9:30 a.m.	Gloxinia Gesneriad Growers	Classroom B
4)*		Denver Parks & Recreation Talent Program	Mitchell Hall
10)*	1:00 p.m.	Ikebana International	Main Room
10)*	7:30 p.m.	Colorado Chapter/American Planning Association	Mitchell Hall
10)*	7:30 p.m.	American Society of Landscape Architects	Mitchell Hall
12)	3:00 p.m.	"Heralding the Season"	Mitchell Hall
14)	7:30 p.m.	Colorado Cactus & Succulent Society	Classroom A
16)*	10:00 a.m.	Around The Seasons	Main Room
16)	7:30 p.m.	Indoor Light Gardening Society	Main Room
25)	All Day	MERRY CHRISTMAS! Gardens Closed	
January, 1983			
1)	All Day	HAPPY NEW YEAR, Gardens Closed	
8)*	6:30 p.m.	Colorado Bar Association	Mitchell Hall

*Members or Enrollees only

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INDIVIDUAL MEMBERSHIP \$15.00

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Recipients receive a card informing them of your gift, plus a free plant which may be picked up at the Gardens. Family memberships are also entitled to pick up a free copy of the beautiful book, "Perennials for Western Gardens" (a gift in itself, value \$9.95)

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